STATEMENT OF

GUENTER M. CONRADUS
MATHEMATICAL SCIENCES NORTHWEST, INC.

CONSULTANT, GULF OF ALASKA OPERATORS' COMMITTEE

before the

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HEARING

on

PROPOSED OIL AND GAS LEASING

on the

OUTER CONTINENTAL SHELF

NORTHERN GULF OF ALASKA

ANCHORAGE, ALASKA
AUGUST 12 - 13, 1975

My name is Guenter M. Conradus. I am employed by Mathematical Sciences Northwest of Bellevue, Washington as a Senior Economist.

In January of 1975, Mathematical Sciences Northwest, Inc. was requested by the Gulf of Alaska Operators Committee to undertake a study of the economic and social impacts which would be felt in Alaska as a whole and specifically in six coastal communities (Juneau, Yakutat, Cordova, Seward, Whittier, and Kodiak) as the result of likely exploration, development and production activities on the outer continental shelf in the Gulf of Alaska. I directed that study.

I had earlier directed a number of economic and social impact studies of, for example, the construction and operation of new or expanded oil terminal facilities in the Puget Sound waters of Washington (for the Oceanographic Institute of Washington) and the construction and operation of four nuclear power plants in the State of Washington (for the Washington Thermal Power Plant Site Evaluation Council).

Prior to returning to the private sector in 1972, I taught undergraduate and graduate economics at Occidental College and San Jose State University. I also taught at the University of California, Los Angeles and the University of Southern California, on a part-time basis.

Over the past twelve years, I have consulted for a number of public agencies and private corporations in matters relating to the economics of growth and change and resource taxation.

The study for the Gulf of Alaska Operators Committee was completed in May of 1975, and in the months of June and July members of the Gulf of Alaska Operators Committee and I briefed officials of the Alaska state government,

the Mayors and members of the Cities Councils of the cities of Yakutat and Cordova, the President and members of the Yak-tat Kwaan Native Corporation in Yakutat, the President of the Eyak Native Corporation, representatives of the Cordova fishermen's union, Alaska state legislators and their staff, and members of the news media.

Copies of the study have been made available to a large number of interested public and private bodies, among them the Alaska state government, state legislators, the Outer Continental Shelf Office of the Bureau of Land Management, the Federal Energy Administration, the Mayors of the six most likely impact communities, environmental groups, and representatives of the news media.

A summary of our study has been prepared by me and will be submitted for the record.

After the study was completed, I spent more than three weeks in England, Scotland, the Shetland Islands, and in Norway. I there talked with government officials, local and regional planners, academicians, fishermen and representatives of some of the oil companies which operate in the North Sea.

This is obviously not the place nor the time to comment at length on both my findings and the impressions I gathered.

The one overwhelming impression I brought back is that the local authorities, both at the city and county levels, with the active cooperation of the oil companies and their contractors, have been able to effectively plan for the onshore development related to support bases, platform construction sites, terminals, gas separation plants, pipelines, and tank farms, thereby minimizing any adverse social and economic effects.

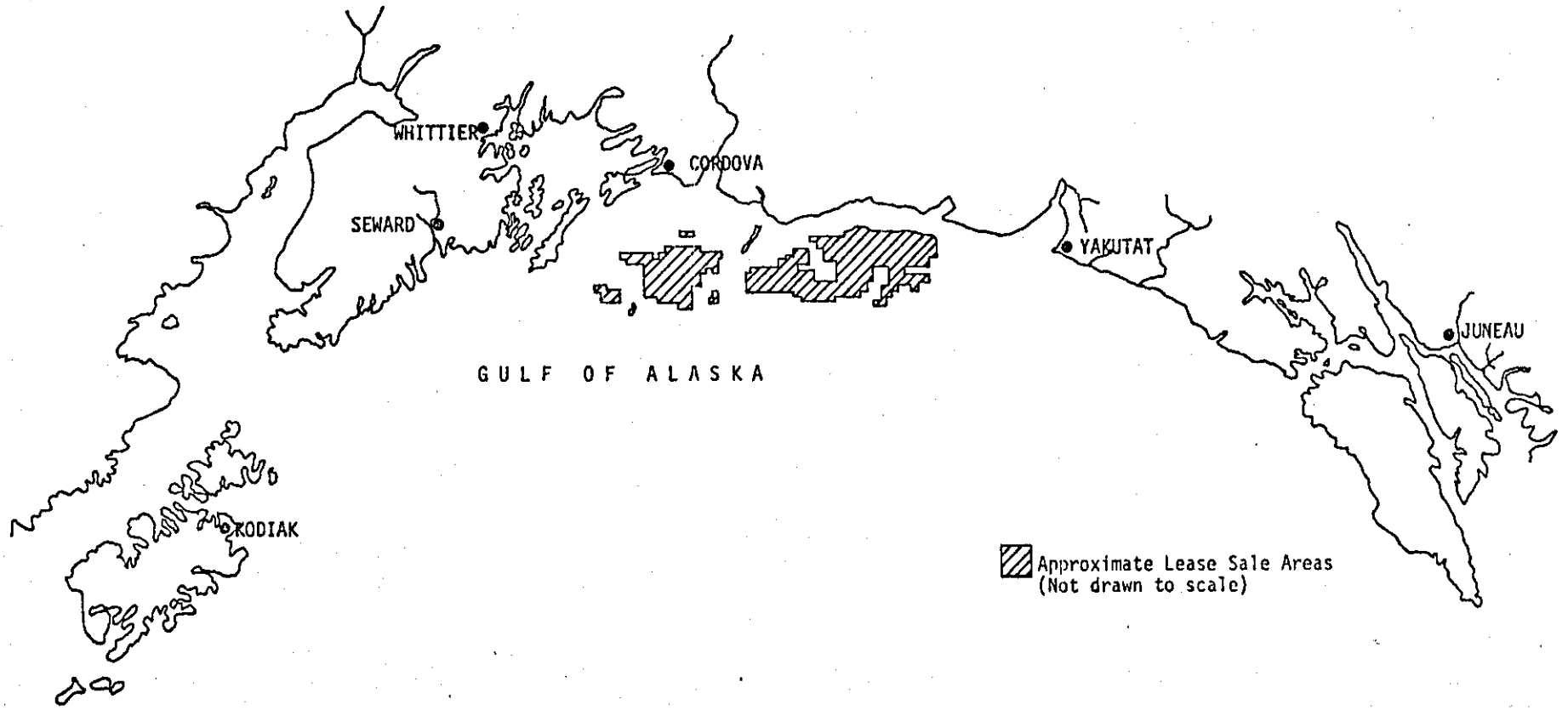
The Economic and Social Impact Study of Oil Related Activities in the Gulf of Alaska was undertaken by Mathematical Sciences Northwest, Inc. (MSNW) at the request of the Gulf of Alaska Operators Committee (GOAOC).

The study addresses the likely economic and social impacts of oil and/or gas exploration, development, and production activities following the first sale of leases on the outer continental shelf (OCS) in the Gulf of Alaska. The impact areas are the "Gulf of Alaska" and "Other Alaska". Within the "Gulf of Alaska" area which includes Anchorage, six coastal communities have been identified as potential primary impact sites, serving as onshore support bases for offshore activities or as transshipping points for the expected future hydrocarbon output of the yet to be discovered fields. The coastal communities are: Juneau, Yakutat, Cordova, Whittier, Seward and Kodiak. (See attached map). The study period is 1976 to 1985.

Since no one knows with any precision what the quantities of proven and recoverable reserves of oil and gas in the lease area are, and since the rate(s) of recovery are also unknown, certain assumptions had to be made. For the base case, the most important assumptions are:

- Exploration activities commence in 1976, leading to the discovery of the first field in 1977.
- A total of five fields will be discovered.
- Each field will ultimately support three production platforms, for a total of fifteen.
- The peak average daily production from all fields will sum to 550,000 barrels/day.

FIGURE I-1: IMPACT COMMUNITIES IN THE GULF OF ALASKA AND APPROXIMATE FIRST LEASE SALE AREAS



- Two pipelines will be constructed to transport the crude to two onshore transshipping terminals.

- Two permanent onshore bases will support the offshore activities during the exploration, development and production phases.

The economic impacts of the oil and gas related activities all emanate from the additional employment generated. Based on data supplied by the GOAOC, the direct employment was estimated to be 291 persons in 1976, the first year of activities, build up to a peak of 1,486 persons in 1980, and gradually decline to 886 persons in 1985.

The incremental onshore indirect and induced employment in such sectors as construction, wholesale and retail trade, finance, insurance, and real estate, and state and local government, for example, was also calculated. In fact, three calculations were made, using an employment multiplier of 2.0, 1.86, and 1.46 respectively. Given a multiplier of 1.86 (thought to be applicable to the geographic areas under consideration), the indirect and induced employment generated by the primary hydrocarbon activities will number 541 persons in 1976, 2,764 in 1980, and stabilize at 1,648 in 1985. Thus, the total employment generated and attributable to the new OCS activities in 1976, 1980, and 1985 sums to 832, 4,250, and 2,534 persons respectively.

While many of the workers who will be employed in the primary activities such as exploration and development drilling and the offshore construction of platforms are likely to be brought to Alaska from other parts of the United States, significant additional employment opportunities in the secondary

sectors will be created for Alaskan residents. Persons presently employed in the construction of the Alyeska pipeline, for example, will be able to transfer their skills to the construction of support bases and transshipping terminals as work on the pipeline winds down. Fishermen can operate supply boats in addition to or instead of their usual occupation (if the Alaskan Limited Entry Program prevents their continuing as fishermen). The induced onshore activities will not only offer additional employment opportunities but are also likely to offer jobs at different and higher skill levels.

In addition to using an economic base model to estimate the future employment (and population) effects, an input-output (I/O) model was constructed. The implementation of the I/O model on a computer permitted the calculating of the direct and indirect employment, income (wage), and output effects of a number of alternative oil development schemes, which differed from the basic assumption of a peak production of 550,000 barrels/day from five offshore fields. The nine basic alternatives which were considered ranged from unsuccessful exploration ending in 1980 without any further activities in the lease sale area, to the discovery of ten fields producing 1.5 million barrels/day and the construction and operation of 10 pipelines to shore and three onshore facilities. Using the I/O model also made it possible to make assumptions about the ability of the Alaskan economy to expand in real terms (15, 30, and 100 percent per year respectively), and to calculate the resulting employment, income, and output effects. Thus, in all, 28 separate oil development and real growth combinations were considered and their economic impacts calculated.

Assuming that from five offshore fields the peak production reaches 600,000 barrels/day, for example, the total (direct and indirect) additional

wage earned in the impact areas amounts to $9.6 million in 1976, peaking at $44.3 million in 1981, and stabilizes at $29.5 million in 1985. If the wage and salary incomes earned in the rest of Alaska are added ($5.0, $14.8, and $16.7 million in 1976, 1981, and 1985 respectively) the total direct and indirect incremental wage and salary payments to persons working in Alaska due to the oil and gas activities would amount to $14.6 million in 1976, $59.1 million in 1981, and would stabilize at $46.2 million in 1985.

The state's production of goods and services will, of course, also increase. Abstracting from the direct values of the oil related facilities and the oil itself, which are enormous, the value of the output of goods and services induced by the primary activities also increases significantly. It is estimated to be $22.9 million in 1976, $79.8 million in 1981, and $87.1 million in 1985.

The additional personal and corporate incomes earned, the value of the additional output of goods and services, and new plants and facilities will provide new state and local tax bases. Several factors made it impossible to estimate the tax revenues accruing to state and local governments. It was not clear what the effective rate of taxation of incomes earned by a temporary workforce would be. The definition of taxable corporate income earned from offshore activities and the effective rate of taxation applied to it were also unknown, as was the value of the onshore plant and equipment subject to state and local property taxation.

The additional economic activity induced by the hydrocarbon development and production not only creates additional employment but also causes the temporary and permanent populations of the impact communities and the rest of

Alaska to grow. A larger population requires an absolutely larger quantity of goods and services. Some of these will be supplied by the private sector. Others, however, require public investment. It is not only important to determine what the absolute quantities of goods and services (public and private) demanded will be, but the points in time when they must be available must also be known, in order to assure that the quantities and qualities of services available to the present population in the impact areas are not diminished by a sudden surge in the demand for them by an immigrant population.

Using the base case of peak petroleum production of 550,000 barrels/day once more, the maximum total population changes in Alaska (assuming all new jobs are filled by inmigrants), are 1,396 persons in 1976, peaking at 7,232 in 1980, and leveling off at 4,426 in 1985. This additional population will be distributed throughout Alaska however. The permanent OCS induced population increases in one or more coastal impact communities (most likely Yakutat and Cordova, because of their proximities to the lease areas), are estimated to be 59 persons in 1976, 700 in 1980, finally reaching 1,302 in 1985.

The assumptions underlying the estimates of the permanent population increases in the coastal communities are:

- 15 percent of the Alaskan component of the workforce employed during the exploration and development phases will live in the coastal communities.

- 30 percent of the workforce employed during the production phase will live in the coastal communities.

- The employment multiplier is 1.86.
- The dependency ratio is 2.04.

Additional public services must be supplied to this population. Some public services will also have to be supplied to at least a percentage of the new temporary population which will reside in the impact areas during the exploration and development and construction phases. In addition, public services will have to be available to those new inmigrants who are drawn to the areas by the expectation of obtaining employment.

A major issue is housing. Assuming that 0.81 housing units are required per member of the permanent labor force (the 1970 Alaskan state-wide average), 23 additional housing units must be available in 1976, a total of 277 units in 1980, and 516 units in 1985. Since none of the coastal communities do at present have any appreciable number of vacancies, these housing units must be newly constructed, or that segment of the workforce which was assumed to take up permanent residence in the coastal communities will have to be transported to the sites from other Alaskan or lower 48 cities.

Other issues addressed are:

The permanent school population in the impact areas will also grow, from 8 students in 1976, 91 in 1980, to 160 in 1985. Depending upon the communities in which this school population finally settles, some, or possibly a significant amount of additional investment will have to be made in fixed facilities.

Because the communities have virtually no excess capacities, investments in a number of other public sectors will also be required. Additional water and sewage treatment as well as solid waste disposal facilities must be provided.

Since none of the communities are presently equipped to handle major medical problems of the existing population, medical facilities and staff must be added.

In order to assure the public safety, more peace officers and firefighters will be required and more equipment and facilities are likely to be demanded.

Additional social capital and professional manpower attracted to the impact sites are likely to benefit both the present resident as well as the newly attracted population.

In all of these public employment categories, wage rates may have to be increased above current levels if the public sector is to compete effectively in labor markets stimulated by the OCS induced activities.

The quantity and range of indoor recreational opportunities must be enlarged.

Finally, given the significant projected increases in the population of the likely coastal impact communities relative to their present sites, and assuming reliance on the automobile, the surface transportation, e.g. roads, parking lots, etc. must be expanded.

It is unlikely that the coastal impact communities, individually or collectively, have the fiscal resources to make the necessary public investments (well in advance of the time their output is actually demanded) to assure that no bottlenecks develop.

After the lease sale has taken place and the impact communities requiring additional public and private investment have been identified, federal, state, and private investment funds must become available. The

magnitudes of the necessary social and private investment programs are a function of the level of exploration activities and ultimately depends upon the discoveries made and the rate of production of oil and/or gas. Equally, if not more important than the availability of financial resources for public and private investment, will be the existence of local and state planning processes which allocate the investment resources. At present, neither the likely impact communities nor the state or federal agencies (in Alaska) appear to have any or adequate staff to effectively deal with the OCS related issues. Therefore, state and local planning agencies should be established to permit the rational planning of offshore and onshore developments and in advance of making the necessary public and private investments.

The OCS induced activities will bring about economic and social changes in Alaska. These changes will be more noticeable in the smaller coastal communities than, for example, in Anchorage or Juneau. Because some major activities, such as the construction of platforms, will not take place in Alaska (in the foreseeable future), the aggregate impacts in Alaska will be relatively smaller when compared with impacts observed in North Sea coastal communities of the United Kingdom or Norway.

Nevertheless, some individuals or firms may incur economic and social costs. It is likely, for example, that competition for labor among employers will push up wage rates, increasing the cost of production of public and private goods and services. Those individuals who, at present, have adequate incomes in the form of money and tranquility which affords them a certain "Lifestyle" may consider the reduction of the latter as both an economic

and a social cost, even if their money incomes increase. On the other hand, the likely economic benefits, both for Alaska and the U.S. as a whole, are significant. The expected value of the hydrocarbon output is enormous. The national importance of its physical availability is obvious. The macro-economic benefits for Alaska will take the form of increased long-run employment opportunities, increased wage and salary incomes, and an increased tax base. At the micro level, an increase in the size of local markets may increase both the quantity and quality of public and private goods available to all segments of the population.

47 large yellow attachments

STATEMENT OF

WILLIAM F. GUSEY

COORDINATOR, ENVIRONMENT AND BIOLOGY

STANDING COMMITTEE

GULF OF ALASKA OPERATORS COMMITTEE

BEFORE THE HEARING OF

THE U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

ON

ENVIRONMENTAL IMPACT OF PROPOSED OIL AND GAS

LEASING-OUTER CONTINENTAL SHELF, GULF OF ALASKA

(OCS SALE NO. 39)

AUGUST 12-13, 1975

AT ANCHORAGE, ALASKA

Gentlemen:

My name is William F. Gusey. I am the Senior Staff Wildlife Specialist in the Environmental Affairs organization, Shell Oil Company, but am appearing here today as the Coordinator, Environment and Biology Standing Committee, Gulf of Alaska Operators Committee. A copy of my curriculum vitae is attached to my statement.

Within the Gulf of Alaska region, fish and wildlife resources are essential to the overall recreational program of the state and contribute substantially to the economy of the state. Time does not permit an adequate discussion of these resources at this point. However, we are submitting a detailed statement entitled, "Fish, Wildlife and Petroleum Production - The Gulf of Alaska," dated August, 1975. We ask that this statement and the following appendices be made a part of the record of this hearing.

Appendices 1 to 5, a 524 page document (2 volumes) describing the fish and wildlife resources of the Gulf of Alaska.

Appendices 6 to 8, a 227 page document of supplementary fish and wildlife data, which discusses existing petroleum industry experience and the resources of the Gulf of Mexico, Santa Barbara Channel and Cook Inlet; the National fishery situation from 1939 to 1974, as applicable to fishery trends where the petroleum industry currently is and is not operating; and Gulf of Alaska demersal fish and shellfish distribution and abundance data for the period 1950 to 1971.

On behalf of the Environment and Biology Committee of the Gulf of Alaska Operators Committee I want to express our appreciation for the generous responses we received to our many requests for data from many individuals in the Alaska Department of Fish and Game; National Marine Fisheries Service;

surfaces provided by oil platforms. Encrusting organism also thrive on these surfaces.(1)

Thus, the reef effect of offshore platforms, like other artificial reefs, is an ecological asset. The abundant fish around such structures is well known in the Santa Barbara Channel and in the Gulf of Mexico. These platforms serve as artificial reefs where major fish populations are concentrated. In the Gulf of Mexico this feature of platforms has been instrumental in the development of a substantial sport fishery off the Louisiana coast.(2) Whether or not this will be a measurable value in the Gulf of Alaska will be determined only on the basis of sport fishing demand.

In the Gulf of Alaska, we believe that mid- and upper-water pelagic fish will orient to platforms, some strongly, with numbers dictated by seasons and available food. Studies by the National Marine Fisheries Service (Klima 1970),(3) revealed that certain Gulf of Mexico open water species such as sardines, menhaden, and jacks were attracted in great numbers to small structures positioned about 50 feet below the surface. In excess of 10,000 fish were attracted in one day and upwards to 100,000 after only seven days.

Diver observations in the Gulf of Mexico indicate that commercial quantities estimated at up to 25 metric tons of fish were attracted to an artificial structure on one occasion, and, on six others, at least 5 metric tons were attracted during a 20-day study.(3) It is questionable that this will occur with strongly migratory fish such as salmon.

3. The effect of offshore platforms in reducing the fishable sea floor is yet to be examined, but in terms of fishery harvests, is probably statistically insignificant.

by the Bureau of Land Management for this Gulf of Alaska lease-sale. In addition, seal populations exist near several coastal locations which may be considered as potential crude oil terminal sites. These include populations at Yakutat Bay, Icy Bay, southern end of Kayak Island, and the northern end of Montague Island.(6)

Abandonment of harbor seal pups by their mothers is a common occurrence, particularly if they are disturbed by hunting or other activities of man, including aircraft and boat traffic. The seriousness of this reaction as a function of seal populations in the immediate vicinity of terminal sites cannot be fully evaluated at this time. Seals will vacate any shoreline area which is greatly modified by construction and followed by intense industrial activity. Measures to mitigate these effects will have to be determined on a site-by-site basis. On the other hand, seals may continue to occupy previously utilized beaches or rocks some distance removed but in the general area of a shore facility, i.e., one mile.

Steller Sea Lions

Significant sea lion concentrations have been identified at seven points along the perimeter of the area offered for an OCS lease sale.(5) Five of these concentrations are in the vicinity of sites which could be used as crude oil terminal sites. These include populations at Sitkagi Bluffs at Yakutat Bay, Kayak Island, Seal Rocks and Porpoise Rocks off Montague Island, and at Fountain Rock off Middleton Island.(6)

The existence of substantial sea lion populations along the California coast where there is extensive boat traffic supports our opinion that, in general, boat traffic will have little adverse effect on sea lions in the Gulf of Alaska. On the other hand, helicopter or other aircraft

that a high degree of curiosity will exist, following some initial avoidance of areas of human activity or machinery noise. We expect that these animals will find the water column beneath platforms excellent fishing grounds.

Influences on Birds

Twelve areas with major concentrations occur on the mainland or on offshore islands adjacent to the broad area offered for this OCS lease-sale.[5,8] In general, seabird populations will remain largely uninfluenced by offshore structures and oeprations. Canadian studies indicate minimal disturbance of several species of birds by helicopters; however, aircraft activity can be programmed to avoid nesting and colonial roosting in day-to-day traffic. It is not anticipated that boat activity accompanying OCS activities will pose any stress on seabird colonies.

Any production, storage or processing facilities constructed onshore should involve consideration of bird breeding and roosting and foraging sites in order to reduce the disturbance of such areas to a minimum. In some instances the conflicts may be obvious, such as a construction site in the immediate vicinity of a large breeding colony or eel grass bed, or less obvious, such as the filling of intertidal mud flats which may serve as a foraging areas for shorebirds.

Those species which tend to be most vulnerable to human disturbances are the colonial nesting species which nest in exposed sites. Adults frightened off nests leave their young vulnerable to exposure and predation. Knowledge of the sensitivity of these birds to such factors will lead to operational plans designed to limit or avoid any adverse effects on their populations.

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William F. Gusey
Senior Staff Wildlife Specialist
Environmental Affairs
Shell Oil Company
Houston, Texas

B.S. (Biology), 1950, Willamette University
Salem, Oregon

M.S. (Zoology-Wildlife), 1952, Kansas State University
Manhattan, Kansas

Organizations and Positions:

Bureau of Sport Fisheries & Wildlife, U.S. Department of the Interior, 1952-1964, and 1966-1968.

Locations: Oregon, Washington, Montana, Indiana, Washington, D.C.
Positions: Chief - Branch of Pesticide Surveillance and Monitoring, 1966-1967
Asst. Chief - Division of Wildlife Services, 1967-1968

Pesticides Regulation Division, U.S. Department of Agriculture, 1964-1966.

Location: Washington, D.C.
Position: Asst. Chief Staff Officer - Animal Biology

Shell Chemical Company, Agricultural Chemicals Division, 1968-1969.

Location: New York, New York
Position: Senior Staff Wildlife Specialist

Shell Oil Company, Environmental Affairs, 1970-Present

Locations: New York, New York; Houston, Texas
Position : Senior Staff Wildlife Specialist

Associated Activities:

Vice-Chairman, Program Review Sub-Committee, Federal Committee on Pest Control, 1966-1967

Technical Advisory Group, Committee on Water Quality Criteria, Federal Water Pollution Control Administration (now Federal Water Quality Office), 1967-1968

Presentation of testimony related to offshore petroleum operations before the:

Great Barrier Reef Oil Drilling Royal Commission,
Brisbane, Australia, May, 1971.

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Alaska Department of Natural Resources, Drilling Permit Hearings, Homer, Alaska, May 18, 1974.

STATEMENT OF

EDWARD W. MERTENS, CHAIRMAN

AMERICAN PETROLEUM INSTITUTE COMMITTEE ON

FATE AND EFFECTS OF OIL IN THE ENVIRONMENT

BEFORE

THE U.S. DEPARTMENT OF INTERIOR

BUREAU OF LAND MANAGEMENT HEARING

ON

ENVIRONMENTAL IMPACT OF PROPOSED OIL AND GAS

LEASING--OUTERCONTINENTAL SHELF, GULF OF ALASKA

(OCS SALE NO. 39)

AUGUST 12-13, 1975

ANCHORAGE, ALASKA

MR. CHAIRMAN:

My name is Edward Mertens. I am employed as a chemist by Chevron Research Company, a research subsidiary of the Standard Oil Company of California. During my career, which extends back to the close of World War II, I have held a number of scientific and research management assignments concerned with research work on the heavier fractions of crude oil and the many products derived from these fractions. I hold over 20 U.S. and foreign patents and have written a number of technical articles based on this work. These heavier fractions, incidentally, tend to persist longer after a typical oil spill.

Ten years ago my work began to involve the environmental and health aspects of these products. For the past six years, I have devoted full time to work on environmental problems. As the primary duty of my current assignment, I am Chairman of the American Petroleum Institute's Committee on the Fate and Effects of Oil in the Environment.

API initiated a comprehensive research program on the fate and biological effects of oil spills five years ago. The total cost of this program to the industry is well over a million dollars each year. I expect that this level of support will continue for at least the next several years.

Our program has already yielded a wealth of information. More than 40 papers either have been written or are in preparation by those investigators we have sponsored at

various universities and research organizations. Ultimately, this information will be an important contribution to the large body of literature pertaining to the fate and effects of oil in the marine environment.

Perhaps the most serious problem concerning the potential effects of oil on marine life was whether oil, once taken up by a marine organism, would be permanently retained by that organism and, if so, whether the oil would become concentrated as it moves up the food chain. If this were true, in time the oil would reach some member of the food chain that is used by the human race as part of its diet. Thus, it might constitute a threat to human health. This hypothesis has been advanced by literally scores of authors in their reports, reviews, environmental impact statements, research proposals, and similar writings that are concerned with the effects of oil on marine life. However, as my testimony today will show, these concerns have no valid scientific basis because extensive research shows that oil does not permanently enter the food chain.

This hypothesis is based largely on a study conducted by Blumer following a spill of No. 2 fuel oil in Buzzard's Bay, Massachusetts, in 1969[1] and his subsequent conclusions.[2] Blumer analyzed oysters exposed to this spill and found they had taken up oil fractions. He kept three of the exposed oysters--only three--in flowing seawater in his laboratory. One oyster was analyzed for its oil content after 72 days;

the other two after 180 days. Concerning this work he states, "Oysters that were removed from the polluted area and that were maintained in clean water for as long as six months retained the oil without change in composition or quantity. Thus, once contaminated, shellfish cannot cleanse themselves of oil pollution."[1]

My previous testimonies given at hearings sponsored by the Department of the Interior in Corpus Christi, Texas, last September[3] and in Beverly Hills, California, last February[4] cited nearly a dozen references[5-15] that refute Blumer's conclusion. Every reference reports that once an exposure to oil has passed, the amount of oil in the organism had either returned to, or closely approximates, the original background level. Release occurs rapidly at first, but in a few instances, as much as 6-8 weeks may be required before the last traces may no longer be detectable.[16,17] Further, this conclusion, namely, that oil is released quickly and either nearly or completely quantitatively, is corroborated by additional publications that have appeared in recent months.[17-23]

Even Blumer's data do not bear out his conclusion cited above. If one compares closely the concentration of oil he found in the oyster tissues after being held in the laboratory for six months[1] with the concentration of oil in the tissue found at the beginning of the depuration experiment,[24,25] the average content of oil per 100 grams of tissue are 3.8

and 6.9 milligrams, respectively. Even by his data, he shows a release of almost 50%, rather than none as he states in his conclusion. He claims that the oil quantities in the tissues before and after the experiment are in good agreement, especially if allowance is made for the apparent dilution of oil by growth of the oysters during the course of the experiment. His data show that the average gain in weight per animal was barely 5%. If the decline was attributed solely to dilution by growth, the average content of oil per 100 grams of tissue should have declined from 6.9 milligrams to 6.6 milligrams rather than 3.8 milligrams.

Thus, I am not aware of any reference in the literature--not even Blumer's work--that support his contention that oysters or any other marine organism retain whatever oil they have accumulated without change in composition or quantity once their exposure to oil has been terminated. On the contrary, every reference concerning uptake and depuration research that I have seen shows that marine organisms depurate once an oil spill episode or a simulated spill has passed. Indeed, this conclusion is shared by the Energy Policy Project of the Ford Foundation,[26] the National Academy of Sciences,[27] and the Marine Technology Society.[28]

These results which I have just summarized strongly refute the previously mentioned hypothesis which has been adopted widely by the critics of our industry. Since marine organisms subjected to an oil spill do not retain oil permanently,

we feel that it is highly unlikely that such contamination becomes concentrated by transfer from one trophic level to the next through the food chain. Thus, the possibility of transfer of harmful oil fractions by this mechanism so that they become a threat to human health becomes extremely remote or, more likely, nonexistent.

These latter conclusions are supported by research conducted both in the laboratory and in the field.

The question of magnification of hydrocarbon concentrations occurring from transfer up the food chain was investigated by Cox[7] and J. W. Anderson.[8] Neither investigator found any evidence of magnification. Their observations agree with those of Straughan, who found no evidence of biomagnification in her recently completed two-year study of the marine community exposed to the natural oil seeps near Santa Barbara.[29] Burns and Teal found no relation between the hydrocarbon content of an organism and its position in the food chain in their study of the Sargasso Sea community.[30] Thus, neither laboratory work nor field studies support the contention of the industry's critics that the concentration of oil increases as it progresses through the food chain.

Exposure at sublethal concentrations of oil has shown no effect on growth rate of marine organisms. This conclusion was reached by R. D. Anderson[6] and Cox[7] in their research on oysters and shrimp, respectively. Their conclusions agree

with those obtained by Mackin and Hopkins,[31] who found no difference in the growth rate between oysters growing in an area subjected to oil contamination and that of control oysters in an uncontaminated area. Nor did Straughan, in her work supported by API, find that the natural oil seeps near Santa Barbara affected the growth rate of marine organisms living in the area.[29] More recently, these results are confirmed by Battelle-Northwest studies at Lake Maracaibo, Venezuela. There they exposed lisa, a fish native to that area, for 11 weeks to Tia Juana Medium crude oil.[32] No effect on growth rate was observed. Since growth rate integrates many life processes and physiological factors, we are encouraged by those results. Part of our research program is directed toward studying more extensively the potential effects of exposure of marine life to sublethal concentrations.

It is widely believed by the public that whenever an oil spill of any reasonably large magnitude occurs, the aftermath is a major devastation of marine life. Further, the public is conditioned to believe that this devastation will persist for an extended period of time. Most of my remaining comments today will provide information that will show these beliefs are inaccurate insofar as all but the most severe spills are concerned.

A comprehensive survey of more than a hundred major spills that occurred throughout the world over a 12-year period (1960-1971) was made by Ottway.[33] An analysis of the data

from this survey revealed that birds represented the type of marine life most often significantly affected. In less than 25% of the spills were more than 50 birds involved. For other forms of marine life where damage could be described as extensive, the incidence was even less.[34] These levels are probably low because some of the spills may not have been adequately reported. Nevertheless, only a small number of spills, most notably the West Falmouth and the Tampico Maru spills, resulted in significant damage lasting a year or more. The latter spill, incidentally, occurred near Baja California in Mexico in 1957. Comparable damage resulted from the Torrey Canyon spill, but it is generally acknowledged that this damage resulted primarily from the use of improperly formulated dispersants applied in an improper manner rather than from the effect of the oil itself. All three of these spills occurred near shore.

On the other hand, spills from offshore platforms have been relatively rare. Of the 19,000 wells drilled in our continental waters over the past 25 years, only the Santa Barbara spill reached the beach in a quantity that required extensive cleanup. Its effect on marine life was slight and temporary.[35] Only two other significant platform spills have occurred.[36,37] Coincidentally, both of these were in the Gulf of Mexico in 1970. One of these was studied extensively to assess its environmental impact. Its damage

to marine life was inconsequential.[36] By all standards, this record of the offshore industry is impressive.

The factors that are responsible for the wide variations in the environmental effects of oils spills are identified by McAuliffe.[38]

He observes that three conditions are especially critical; and for a spill to have significant environmental damage, all three conditions must exist simultaneously. These conditions are:

1. The oil must be spilled into a confined body of water, such as a small bay. Thus, the volume of oil spilled is large with respect to the body of water being impacted.

2. The oil should be a refined oil, such as No. 2 fuel oil.

3. Storms or heavy surf must cause the spilled oil to be churned into the bottom sediments.

Indeed, all three conditions did exist in the case of the two spills, the West Falmouth and the Tampico Maru spills, in which significant damage attributed to the oil itself persisted beyond a year or two. In each case, the oil spill involved a No. 2 fuel oil, which was confined in a small area of shallow water for several days. Storms and/or heavy surf caused the oil to be churned into the bottom sediment.

In contrast, offshore platforms are almost without exception located in unconfined areas and in reasonably deep waters. Thus, the first condition outlined by McAuliffe can rarely be met. Secondly, a platform produces crude oil, which is substantially less toxic than most refined oils. Thirdly, in such deep waters, storms and heavy surf rarely, if ever, are able to churn oil into the sediments. Thus, the absence of all three factors minimizes the risk to the marine ecosystem.

Moreover, it must be remembered that since platforms are usually located well offshore, substantial changes in the character of the spilled crude oil will occur before it reaches the nearshore zone, which is the most biologically vulnerable area. Once oil is spilled, there is time for the lighter oil fractions to evaporate. Within a matter of hours, components of crude oil as heavy as gasoline have escaped into the atmosphere.[39,49] These fractions are generally acknowledged as the most toxic fractions. This conclusion is confirmed by work conducted by Battelle-Northwest at Lake Maracaibo, Venezuela. They demonstrated that after only two hours' weathering, the toxicity of the oil to shrimp had dropped substantially.[32] This drop correlated closely with an attendant drop in concentration of light aromatics in the water column.

There is time also for many of the components of the crude oil to be dispersed or, for some components, to be dissolved

in the water column. Subsequent dilution rapidly reduces their concentration to far below toxic levels. Further, their presence in the water column is often short-lived because many components partition readily from the water into the atmosphere.[41] And, finally, if a spill should threaten a nearshore zone or shoreline, there is time for cleanup equipment to be placed in operation.

The public has also expressed concern about chronic pollution of the oceans by oil that may occur from increased offshore drilling. They envision that the amount of oil entering the oceans will be substantial and that, consequently, the quantity and diversity of marine life will gradually diminish to a small fraction of the current level. My remaining comments today will point out that the day-to-day operation of additional offshore platforms will impose, at most, a very small incremental burden of oil to the oceans of our world.

Estimates of the quantities of oil that enter the oceans annually from various sources have been developed by the National Academy of Sciences.[27] Of the estimated six million metric tons that reach the oceans throughout the world each year, nearly 80% comes from river and urban runoff, municipal and industrial waste discharges, and marine transportation. About 10% comes from natural seeps and another 10% from atmospheric fallout. The contribution from offshore production is 1.3%.

Thus, the contribution of oil to marine waters from offshore production relative to the overall amount can be considered minimal if not negligible. With respect to the amount that comes from natural oil seeps, offshore production contributes only one-eighth as much. Significantly, even if we doubled the number of wells in our outercontinental waters, their total contribution to marine waters would be still a small fraction and would be only one-fourth of the amount that comes from natural oil seeps. This comparison is especially significant for the purposes of this hearing in view of the many natural seeps that are known to exist along the Gulf of Alaska shoreline.[42] Undoubtedly, many other seeps exist in the deeper waters of the Gulf that have not been observed.

In summary, we are convinced that oil poses far less of a threat to marine life than has been popularly believed. There is no evidence that oil is passed through the food chain and thereby becomes concentrated so that eventually it becomes a health hazard to man. Major oil spills from offshore platforms have been a rare occurrence to date. Those who oppose offshore drilling frequently express the fear that if a major spill should occur, it will have a devastating effect on marine life. This fear is unfounded, for out of more than 19,000 wells drilled in offshore waters so far, there has <u>never</u> been a spill where such devastating effects have taken place. Indeed, in only one spill has any

measurable damage occurred; and its extent was inconsequential. And, finally, even if we doubled the number of offshore wells, the added input of oil from such operations would add little more than 1% to the oil that now enters the marine waters annually.

Our Committee is convinced that by taking proper precautions that employ technology presently available, the added risk is extremely small. This conclusion is confirmed by the excellent record of the offshore industry since its beginning more than 25 years ago.

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STATEMENT OF

DR. DALE STRAUGHAN

BEFORE THE

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HEARING

ON

PROPOSED OIL AND GAS LEASING

ON THE

OUTER CONTINENTAL SHELF

NORTHERN GULF OF ALASKA

ANCHORAGE, ALASKA
AUGUST 12-13, 1975

STATEMENT FOR ENVIRONMENTAL HEARING FOR THE

PROPOSED GULF OF ALASKA LEASE SALE

DALE STRAUGHAN

My name is Dale Straughan and I am presently a Research Scientist at the Allan Hancock Foundation, University of Southern Califronia, Los Angeles.

I received my Ph.D. in Zoology at the University of Queensland in 1966. Since that time, I have worked at the James Cooke University of North Queensland, Hawaii Institute of Marine Biology, and Costa Rica before becoming a Visiting Assistant Professor in Biological Sciences and a Research Associate of the Allan Hancock Foundation of the University of Southern California in 1969.

Between February 1969 and February 1971, I was the Project Director of the Allan Hancock Foundation study to determine the biological and oceanographical effects of oil pollution following the Santa Barbara oil spill in January 1969. Since that time, I have studied the effects of oil on marine biota under both federal (Sea Grant College, Environmental Protection Agency and NOAA) and industrial (API, WOGA) auspices. This has included studies of variation in tolerance of field populations to oil pollution, effects of oil and detergents on survival of species and recolonization of intertidal substrates, the thermal effects of black crude oils in the upper intertidal zone, long term and sublethal effects of exposure to oil.

I HAVE ALSO TRAVELLED WIDELY TO OBSERVE THE EFFECTS OF OIL SPILLS--'TORREY CANYON' IN CORNWALL, 'FLORIDA' IN MASSACHUSETTS, 'TAMANO' IN MAINE, 'METULA' IN THE STRAITS OF MAGELLAN--AS WELL AS CALIFORNIA AND THE GULF OF MEXICO.

I AM A MEMBER OF THE NATIONAL ASSEMBLY OF ENGINEERING COMMITTEE ON SAFETY OF OUTER CONTINENTAL SHELF PETROLEUM OPERATIONS. THIS COMMITTEE WAS ESTABLISHED TO REVIEW THE U. S. GEOLOGICAL SURVEY PROGRAMS ON THE OUTER CONTINENTAL SHELF. I AM ALSO A MEMBER OF THE NATIONAL OFFSHORE OPERATORS ADVISORY COMMITTEE TO THE COAST GUARD. I HAVE ALSO SERVED AS AN OBSERVER FOR THE ENGINEERING COMMITTEE ON OCEANIC RESOURCES AT THE RECENT MEETING OF ICG FOR GIPME IN PARIS. I AM ALSO ASSISTING IN THE PREPARATION OF A PAPER FOR THE U. N. GROUP OF EXPERTS ON SCIENTIFIC ASPECTS ON MARINE POLLUTION.

I HAVE BEEN ASKED TO COMMENT TODAY BY THE GULF OF ALASKA OPERATORS COMMITTEE.

SOME HAVE EXPRESSED FEARS THAT THE PROPOSED DEVELOPMENT OF THE PETROLEUM RESOURCES OF THE GULF OF ALASKA WILL RESULT IN ENVIRONMENTAL DISRUPTION. ONE PARTICULAR CONCERN IS THE POSSIBILITY OF A LARGE OIL SPILL SUCH AS THE ONE WHICH OCCURRED IN THE SANTA BARBARA CHANNEL IN 1969 AND A SECOND IS THE FEAR OF "CHRONIC POLLUTION."

CERTAINLY EVERY REASONABLE SAFEGUARD MUST BE EMPLOYED TO PREVENT THE OCCURRENCE OF SUCH SPILLS AND ELIMINATION OF POSSIBLE CHRONIC POLLUTION SOURCES. HOWEVER, THERE CAN BE NO ABSOLUTE GUARANTEE THAT THERE WILL BE NO SPILLAGE OF OIL. THEREFORE, ONE MUST ADDRESS THESE PROBLEMS.

EXPERIENCE IN THE SANTA BARBARA AREA SHOULD PROVIDE SOME INSIGHT INTO THE EFFECTS OF OIL SPILLAGE IN THE GULF OF ALASKA. WHILE THE AREA IS COLDER THAN THE SANTA BARBARA CHANNEL, MANY OF THE SAME SPECIES RANGE THROUGH AND BEYOND BOTH AREAS. HENCE, DATA IS AVAILABLE ON THE SURVIVAL OF MANY OF THE SPECIES FOUND IN THE GULF OF ALASKA ON EXPOSURE TO BOTH LARGE DOSAGES OF OIL IN AN ACUTE POLLUTION SITUATION AND TO A CHRONIC EXPOSURE SITUATION.

FIRST OF ALL, I WOULD LIKE TO COMMENT ON THE RESULTS OF OUR WORK IN THE SANTA BARBARA CHANNEL DURING THE PERIOD AFTER THE 1969 SANTA BARBARA OIL SPILL. OUR INITIAL FINDINGS SHOWED A SIGNIFICANT MORTALITY IN BIRD POPULATIONS AND IN THE UPPER INTERTIDAL BARNACLE, CHTHAMALUS FISSUS. THERE WAS ALSO SOME DIE-OFF IN THE SURF GRASS, PHYLLOSPADIX AND THE ALGAE, HESPEROPHYCUS HARVEYANUS. NO REPORTS DEMONSTRATED DAMAGE TO POPULATIONS OF MARINE VERTEBRATES, FISH, SEALS, OR WHALES. FISH CATCH DATA AND A TRAWLING SURVEY BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME AS WELL AS ~~FISH-SPOTTING~~ DATA FROM THE BUREAU OF COMMERCIAL FISHERIES DID NOT INDICATE ANY DECREASE IN FISH POPULATIONS DUE TO THE OIL SPILL. A SURVEY OF GREY WHALE STRANDINGS DURING THE LAST DECADE DID NOT SUGGEST THAT FIVE (5) STRANDINGS IN THE MONTH AFTER THE OIL SPILL WAS INORDINATELY HIGH. THROUGH A PROGRAM OF TAGGING OF OILED (75% OF BODY COVERED BY OIL) AND UNOILED ELEPHANT SEALS, OVER A 13 MONTH PERIOD, B. LEBEOUF FOUND NO EVIDENCE OF IN-INCREASED MORTALITY AMONG OILED OVER THE UNOILED ANIMALS. THERE WAS ALSO NO PROOF OF AN INORDINATELY HIGH MORTALITY OF SEA LION PUPS AT SAN MIGUEL DUE TO OIL POLLUTION.

In February, 1971, the Allan Hancock Foundation issued a two-volume report on this research. I wish to point out that we tried to include all biological studies by other groups and agencies following the spill in this report. This included extensive surveys by the California Department of Fish and Game, Bureau of Commercial Fisheries, Dr. M. Neushal at the University of California at Santa Barbara, and Dr. Wheeler North from the California Institute of Technology among others. The reports of these surveys substantiated the findings by the Allan Hancock Foundation study. That is, that the biological damage was much less than predicted immediately after the spill and the area was recovering.

Recovery of the area started within seven (7) weeks of the oil spill. The barnacle, Balanus glandula, had settled on dry oil by that time. Between six and seven months after the spill, the California Department of Fish and Game reported "near normal quantities" of Hesperophycus while Phyllospadix was growing again in damaged areas of the Channel (A.H.F. Report 1:495). Chthamalus fissus was recorded settling on oiled substrates 10 months after the spill. In more recent experiments this species settled on substrates less than 10 weeks after they were soaked in oil. These experiments also showed that recolonization rates depend on the season of the year. Hence, recolonization by this species need not be delayed as long as 10 months. This work is reported in the Proceedings of the Conference on Prevention and Control of Oil Spills sponsored by API, EPA, and the Coast Guard in June, 1971.

ALTHOUGH COMPARABLE DATA TO THAT OBTAINED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME IN 1969, IS NOT AVAILABLE ON BIRD POPULATIONS FOR LATER YEARS, THE AUDUBON CHRISTMAS CENSUS FOR THE FOLLOWING YEARS (1969-1973) DID NOT REVEAL A LOSS OF BIRDS CORRELATED WITH THE OIL SPILL. THE DIFFICULTY WITH THESE DATA IS THAT THE LEVEL OF EFFORT IS PROBABLY STILL TOO LOW TO REGISTER CHANGES IN THE SANTA BARBARA AREA BECAUSE THE RESULTS ARE RELATED TO THE NUMBER OF OBSERVERS.

IN SUBSEQUENT ECOLOGICAL SURVEYS OF ROCKY SHORES AND SANDY BEACHES IN 1974, WE WERE UNABLE TO DEMONSTRATE DISRUPTION IN THE DISTRIBUTION AND ABUNDANCE OF INTERTIDAL SPECIES DUE TO THE SANTA BARBARA OIL SPILL. OUR CONCLUSIONS WERE THAT ANY DISRUPTION HAD BEEN OF A TEMPORARY NATURE.

AT THIS POINT, I WOULD LIKE TO TAKE EXCEPTION TO FIGURE 45 IN THE EIS WHICH HAS BEEN QUOTED DIRECTLY FROM THE CEQ REPORT. IN THIS FIGURE, CEQ EXTRAPOLATED FROM MY DATA, THAT IT TOOK 3 YEARS FOR OIL FROM THE SANTA BARBARA SPILL TO BE LOST FROM THE SANDY BEACHES. GOD KNOWS HOW THEY CAME TO THAT CONCLUSION! I CAN ONLY SPECULATE THAT THE CEQ WRITERS BELIEVED THAT BECAUSE I SURVEYED THE SANDY BEACHES 2 AND 3 YEARS AFTER THE OIL SPILL, THAT I HAD EVIDENCE THAT OIL FROM THE SANTA BARBARA OIL SPILL WAS STILL ON THOSE SANDY BEACHES. I HAVE NO EVIDENCE THAT OIL FROM THE SANTA BARBARA OIL SPILL WAS STILL ON A SANDY BEACH TWO OR THREE YEARS AFTER THE OIL SPILL. IN FACT, ALL OIL THAT WAS COLLECTED AND THAT COULD BE TRACED TO AN IDENTIFIABLE SOURCE, WAS DESIGNATED SEEP OIL.

One of the problems of ascertaining possible effects of oil pollution in a new area is that of prediction when so many of the variables are unkonwn. Here one can assume that oil offshore from the Gulf of Alaska would possibly be similar to that obtained from natural oil seepage along the coast. The major publicized spillages of oil in cold waters to date, have been of Arabian crude oils (e.g., "Torrey Canyon" and "Metula"). These have formed large quantities of chocolate mousse--something that has not been observed in the spillage of oils along the West Coast of North America. Through the large increase in volume (chocolate mousse may be 1 oil: 4 water), oil in this form may physically kill more animals without any real change in chemical toxicity.

Samples of oil from a field near the Gulf of Alaska were analyzed by Dr. Tom Meyers. He reported that this was a full range crude containing volatiles and that it was remarkably similar to samples from platform A-21 in the Santa Barbara Channel. This was based on gas chromatography in the $C_{10}$ to $C_{35}$ range.

Two series of experiments have been conducted using intertidal snails (Littorina scutulata) from Seward, Alaska, southern Canada, and southern California, and several types of petroleum including crude oil from the Gulf of Alaska and Santa Barbara crude oil, to determine possible tolerance differences in field populations. L. scutulata from Alaska survived as well, and at times better, than those from the Santa Barbara Channel.

MORTALITIES FROM CRUDE OIL WERE LIMITED TO ANIMALS EXPOSED TO 29°C AND APPEAR TO BE A TEMPERATURE RATHER THAN AN OIL EFFECT. SUBLETHAL EFFECTS, INCLUDING ABILITY OF THE SNAILS TO REMAIN ATTACHED TO THE SUBSTRATE WERE ALSO CONSIDERED. IF THE SPECIES IS NOT ATTACHED TO THE SUBSTRATE, IT WILL BE WASHED AWAY AND ESSENTIALLY LOST FROM THE POPULATION. ATTACHMENT RATES OF ANIMALS FROM ALASKA ARE NOT SIGNIFICANTLY DIFFERENT FROM THOSE OF ANIMALS FROM THE SANTA BARBARA CHANNEL.

THE AVAILABLE DATA SUGGEST THAT THE EXPERIENCE IN THE SANTA BARBARA CHANNEL IS MORE RELEVANT TO THE GULF OF ALASKA. THAT IS, THE ENVIRONMENT WILL BE ABLE TO TOLERATE ISOLATED LARGE SPILLAGES OF OIL. HOWEVER, THE WORD ISOLATED MUST BE EMPHASIZED.

LET ME NOW ADDRESS THE SUBJECT OF "CHRONIC" POLLUTION BY PROVIDING SOME INFORMATION FROM A REPORT IN THE LAST DRAFT STAGE. THIS DEALS WITH WORK CONDUCTED OVER A TWO-YEAR PERIOD TO STUDY THE SUBLETHAL EFFECTS OF CHRONIC EXPOSURE TO OIL FROM NATURAL SEEPAGE AND INCLUDED BOTH INTERTIDAL AND SHALLOW SUBTIDAL SPECIES. IT WAS NOT DESIGNED AS A COMMUNITY STUDY, BUT AS A STUDY TO RELATE INDIVIDUAL SPECIES TO OIL. IT ALSO INCLUDED AN EXTENSIVE PROGRAM OF CHEMICAL ANALYSIS OF TISSUES AND SEDIMENTS.

SEVERAL MAJOR POINTS THAT EMERGED WERE THAT MARINE SPECIES CAN AND DO LIVE IN AREAS CHRONICALLY EXPOSED TO OIL. THIS INCLUDES BENTHIC SEDIMENTS. MOST OF THESE SPECIES HAVE PELAGIC LARVAL FORMS. THEREFORE, THIS CAN NOT BE REGARDED AS THE RESULTS OF NATURAL SELECTION OVER MANY GENERATIONS. THERE MAY INDEED BE AN INCREASE IN TOLERANCE TO OIL OF INDIVIDUALS THROUGH CHRONIC EXPOSURE AS WELL AS SELECTION OF THOSE MOST TOLERANT TO OIL FROM EACH GENERATION.

In general, the highest concentration of petroleum hydrocarbons in tissues were found in Mytilus californianus. Examination of the gonads indicated that the species was indeed breeding at Coal Oil Point and that oocytes and eggs appeared normal in the ovary. Likewise, a study of the early stages of larval development in sea urchins, Stronglycentrotus showed no detrimental effects even though the tissues of the parent animals contained petroleum hydrocarbons.

The area was also not populated with malformed organisms. This included a survey of encrusting bryozoans from the kelp canopy. Contrary to the observations of Powell, et al (1970), no hyperplasia of bryozoan ovicells was recorded. Could the effects observed by Powell be due to some other factor operating in their study such as creosote--a coal-tar derivative--which has a higher cancer producing potential than crude oil?

External presence of black oil, however, was associated with a reduction of the brooding rate in the stalked barnacle. Pollicipes polymerus. This appeared to be a termperature effect with the oil increasing the animal's body temperature. However, in Alaska where the species is nearer to the colder end of the range, such an increase in temperature may not be sufficient to reduce the brooding rate.

Others have surveyed production areas (GURC, California Fish and Game) and large ports (Milford Haven). Their data show that the industry has indeed been able to operate without large scale environmental disruption. All these operations, however, do require strict control by industrial operations to minimize contamination of the environment. The need for this continued control and quick response to an incident to maintain clean ports is continually emphasized by Captain Dudley, the Harbor Master at Milford Haven.

I BELIEVE THAT THE OIL INDUSTRY CAN OEPRATE WITHOUT CAUSING MAJOR ENVIRONMENTAL DISRUPTIONS. THOSE RISKS OF SHORT TERM DISRUPTION OF ISOLATED AREAS APPEAR SMALL WHEN COMPARED WITH THE GREATER WIDESPREAD BENEFITS THAT COULD BE GAINED FROM PRODUCTION OF THIS POTENTIAL ENERGY SOURCE.

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STATEMENT OF

DR. ALBERT H. LASDAY

VICE-CHAIRMAN, AMERICAN PETROLEUM INSTITUTE

COMMITTEE ON FATE AND EFFECTS

OF OIL IN THE ENVIRONMENT

BEFORE THE HEARING OF

THE U. S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

ON

ENVIRONMENTAL IMPACT OF PROPOSED OIL AND GAS

LEASING-OUTER CONTINENTAL SHELF, GULF OF ALASKA

(OCS SALE NO. 39)

AUGUST 12, 13, 1975

AT ANCHORAGE, ALASKA

I am Dr. Albert H. Lasday, a Coordinator in Texaco Inc.'s Environmental Protection Department. One of my responsibilities is to advise on and to coordinate the Company's world-wide activities in prevention and control of water pollution, including oil spills.

I also serve as Vice Chairman of the American Petroleum Institute's Committee on Fate and Effects of Oil in the Environment. One of the Committee's sub-units is its Task Force on Physical Transport of Oil, of which I serve as Chairman. This latter group is concerned primarily with sponsoring and supervising, on behalf of the API, research which seeks to describe quantitatively the fate of spilled oil.

For the past seven and one-half years I have been occupied exclusively with water pollution problems. For the initial three and one-half years of that period I was Supervisor of Research at a Texaco laboratory where my section worked on various studies of waste water treatment and oil spill recovery and cleanup. Moreover, I have served as Texaco's Environmental Protection Coordinator at three significant oil spills in which my Company was involved (none of them off-shore), so that I am knowledgeable of the environmental aspects of events attendant on the accidental and unexpected release of large amounts of oil.

Detailed written comments on the "Draft Environmental Impact Statement for the Proposed OCS Oil and Gas Lease Sale-Northern Gulf of Alaska" will be submitted by the Gulf of Alaska Operators Committee. However, I shall comment today on several salient points contained in that document, regarding some of the effects on the environment of crude oil, of oil and gas drilling, and of production-related fluids, including drilling muds, drill cuttings, and produced brine.

WEATHERING AND DISSIPATION OF SPILLED CRUDE

Regarding the crude oil category, it is important, insofar as effects on marine biota are concerned, to distinguish between fresh and weathered oil, as the fresh crude contains components which are present in lesser amounts or even absent after weathering. Regardless of its source, a fresh crude entering a particular place in the marine environment will be transported somewhere else by winds, waves, and currents. During the time of transport, the characteristics and toxicity of the fresh crude are greatly modified by the weathering processes of evaporation, dissolution, photo-oxidation, emulsification, and biodegradation. Further, the operative transport mechanisms remove various components of the oil into other reservoirs such as the atmosphere, the water column, and the sediments.

Thus, any possible toxicity effect of crude oil entering the marine environment is rapidly decreased and effects on marine life much reduced after only a few hours time. This greatly reduced toxicity occurs soon at the original site, say of a spill, and consequently is even further reduced at any distant site to which the crude may be transported, due to the action of weathering and dissipative factors. Dr. Clayton D. McAuliffe discusses this subject of the fate of a spilled oil extensively and in detail in his presentation.

EFFECTS OF SPILLED OIL ON PHYTOPLANKTON

The "Draft Environmental Impact Statement" discusses effects of oil on phytoplankton in several places, and principally on pages 422-431. It is argued that both acute and chronic effects

of oil would be harmful to the phytoplankton population, that the phytoplankton are the ultimate basis of the marine food chain, and thus that any disruption or harmful effects on them would sequentially and adversely involve higher trophic levels. It is my purpose to make available some additional and new information regarding the effects of oil on phytoplankton, and to base some differing conclusions thereon.

Work funded by the American Petroleum Institute (API) and conducted by Ray and Mills at Texas A & M University showed that phytoplankton exposed to the water-soluble fractions of several test oils evidenced reduced primary productivity.[1] However, they noted that once the exposure to oil was terminated, the phytoplankton resumed a normal growth rate within a few days. They conclude that once a spill episode has passed, only a few cells need survive to repopulate a given area rapidly. Recruitment from nearby unaffected areas also would act to restore a normal phytoplankton population quickly. For these reasons, they report that phytoplankton have a great "rebound" potential.

In still other work funded by API, Strand and co-workers at Battelle-Northwest Research Laboratories report that at concentrations of oil less than 1 ppm, oil stimulated the growth of phytoplankton.[2] Other investigators have reported similar observations in Alaska[3], France[4], Canada[5], and elsewhere.[6,7] Evidently at these low concentrations, oil serves as a nutrient.

Finally, The Gulf Universities Research Consortium (GURC) conducted an extensive environmental study[8] in the Gulf of Mexico utilizing control areas away from oil production, and study areas

with concentrated production activities. In his report to GURC[24], Dr. S. Z. El Sayed states, "There is no evidence to suggest that production or drilling activities .... have had any deleterious effect on phytoplankton communities in the off-shore waters ...." Thus, it is concluded that, insofar as phytoplankton are concerned, any adverse effect of crude oil is temporary and that the phytoplankton regenerate quickly after a spill.

CHRONIC EXPOSURE OF MARINE LIFE TO SPILLED OIL

Another subject which is discussed in the "Draft Environmental Impact Statement" is that of the effects of long term, chronic exposure to crude oil. See, for example, the section expressing some of the more prevalent concerns, pages 395-404. Considerable speculation has also appeared both in the technical and in the popular literature on this subject. However, many comprehensive studies have been conducted or are in progress which show that such exposure is not harmful. The most extensive work has been done by the Gulf Universities Research Consortium.[8] The testimony of Mr. J. W. Tyson at this hearing reports that there have been no measurable adverse effects on marine life as a result of the off-shore oil operations in the Gulf of Mexico over the past 25 years or more.

A similar conclusion was reached by Battelle-Northwest Research Laboratories as a result of their three year study of Lake Maracaibo in Venezuela[9], which has been impacted by off-shore operations for several decades. Further evidence is provided by studies conducted by Dr. Dale Straughan on the effects of the natural oil seeps off Coal Oil Point, Santa Barbara, upon the marine

community. She finds that the chronic exposure to oil from the natural seeps does not affect the health of the local marine animals in any way. Neither their growth rates nor their reproductivity are affected. Moreover, she finds no evidence of abnormal growths.[10]

Continuing in the same vein are the results being reported by the Bermuda Biological Station for Research from their study for the API on the effects on marine life of weathered oil washing ashore on some of the Bermuda beaches. So far, after more than a year's study, the researchers find no effects of oil on subtidal and intertidal marine life, nor are any effects observed upon the life that is inhabiting the splash zone.[11]

As a final study of chronic exposure of the marine environment to crude oil, I wish to report on the work being done in the Santa Barbara channel under the direction of Dr. John D. Isaacs of the Scripps Institution of Oceanography. This project, also sponsored by the API, is developing a census of various types of marine life under and adjacent to platforms Hilda and Hazel in the Santa Barbara channel. This census will be compared with a similar one conducted immediately after these platforms were constructed in 1959 and 1960. At the time of construction, very little marine life inhabitated the area. Soon after construction, the fish population had grown to about 6,000 under each platform. The structures had become encrusted with sessile organisms, such as mussels and barnacles, but no marine life was present in or on the sterile drill cuttings deposited at the base of the platforms.[12]

Today the fish populations are estimated at more than 20,000 under each platform. The structures are heavily encrusted by sessile organisms. Also, the drill cutting piles have become a teeming community of benthic life.[13]

These studies provide graphic evidence that there are little, if any, adverse effects upon marine life from chronic exposure to crude oil. On the contrary, they provide good evidence that such off-shore platform structures provide an environment that increases the total biomass for their local area.

Except in confined bodies of water where, for example, sediments can become heavily contaminated, oil has a negligible effect upon marine life. Undoubtedly the major factors responsible for this condition are the very low solubility of oil in water and the rapid dilution which occurs. Most toxic levels of oil involve concentrations measured in the many parts per million range, up to hundreds of parts per million, whereas the concentration of oil in the natural environment lies in the parts per billion range. For example, scientists of the Bedford Institute in Nova Scotia have found hydrocarbon levels in the range of only 1 to 6 parts per billion in waters off the Canadian East Coast.[14,15] Tanker routes in the Atlantic Ocean contain only 2 to 20 parts per billion of hydrocarbon.[16] The hydrocarbon content of the water column affected by the natural seeps near Coal Oil Point at Santa Barbara is, at most, 16 parts per billion.[17] In the studies of the 1970 platform spill in the Gulf of Mexico, the concentrations of hydrocarbon were only 200 parts per billion at the platform and had dwindled to only 1 part per billion a mile away.[18] It is small wonder, therefore, that such low levels of exposure, especially in areas of open moving water, do not significantly affect marine life to any measurable degree.

LABORATORY BIOASSAY VS. REALISTIC CONDITIONS

Laboratory bioassay has been a primary investigative method from which have been derived the results and conclusions which are discussed in the "Draft Environmental Impact Statement," in the sections on the effects of oil on phytoplankton, and the long-term chronic exposure effects of oil. Because of the importance of the conclusions which have been based largely on laboratory bioassay testing, it is necessary to question the validity of that test procedure. Important observations concerning this were made at the API-sponsored Fate of Oil Symposium, May 29-30, 1974, in Washington, D.C. The several contractors conducting research for API on fate and effects of oil reviewed publicly the results they have obtained. A copy of the program is attached.

Significantly, each of the contractors emphasized that results from laboratory bioassay testing cannot be used as a direct measure of the toxic effects that may be expected in a "real world" circumstance. This is especially difficult with oil because it is for the most part insoluble in water. Therefore, a uniform distribution throughout the water is virtually never realized. In the case of oil, evaporation occurs; and, consequently, the lighter fractions are quickly removed. Moreover, in the "real world," dilution also occurs rapidly. In bioassay work, on the other hand, the concentration of a contaminant is held constant throughout the duration of the test, usually 96 hours. This is an unrealistically long time in the case of most spills in marine waters where the exposure time for a given local area is brief, often only a matter of hours, because the spilled oil is being moved by winds, waves, and currents.

Furthermore, the loss of fin fish is seldom observed in an oil spill in the marine environment even though a significant susceptibility is measured by laboratory bioassay work. This anomaly exists because in bioassay work the test fish is confined to a given volume of water, whereas, in marine waters, the fish can escape after evidently sensing the oil. This lack of correlation between bioassay work and field results is generally recognized. For example, the Marine Technology Society in April of this year conducted a workshop to assess this problem and to recommend needed research. Also, this deficiency was emphasized as a problem in a workshop sponsored last year by the Institute of Petroleum in England.[19]

As a result of the experiences of and conclusions reached by its contract research organizations, as well as by the observations of others, the API is placing maximum emphasis on field studies in its continuing sponsorship of research concerning the effects of oil. It is therefore recommended that any revisions to the "Draft Environmental Impact Statement" place increased emphasis on the results of field studies, and very cautiously evaluate the conclusions based on laboratory bioassay experiments.

EFFECTS OF DRILLING MUDS ON MARINE ORGANISMS

Drilling muds are identified in the "Draft Environmental Impact Statement" (pages 341-343, 417-418) as having possibly undesirable effects due to toxicity of some components and to turbidity. Let's now address ourselves to some additional information regarding drilling muds.

Drilling muds are complex mixtures of many different components. The toxicity of these components varies widely when tested individually. However, the most toxic components are used only sparingly in the formulation of the drilling muds. The low concentrations of such components in the muds are reflected in the high concentrations of mud in the receiving waters that are needed to produce a toxic effect.

This conclusion is illustrated by the work reported by Logan, Sprague, and Hicks of the University of Guelph in Ontario, Canada[20] and summarized by Falk and Lawrence.[21] Logan and coworkers determined by laboratory methods the LC50 (the lethal concentration of drilling mud in water needed to kill half of their test organisms) after an exposure of 96 hours. Their test organisms were lake chub and rainbow trout. The LC50's for a 96-hour exposure period ranged from 0.83% to 12.0%. Thus, since such high concentrations of drilling mud in water are required in order to demonstrate toxic effects, only moderate dilution, depending on the drilling mud being used, would be needed to render the mud non-toxic even for a 96-hour exposure period. The currents that normally exist around a platform would achieve this degree of dilution within a few feet of the point of discharge and within an elapsed time of only a few minutes. Thus, the effect of discharging drilling muds upon the health of a marine ecosystem can be considered negligible.[22] But one must bear in mind the limitations of laboratory bioassays, as discussed above.

The "Draft Environmental Impact Statement" expresses specific concern about the ferrochrome lignosulfonates and barite

used in the formulation of drilling muds. Logan et al[20] report the toxicity level of ferrochrome lignosulfonate to be about 1500 ppm, or about 0.15%. Since it is used sparingly in the formulation of drilling muds, its concentration in the water after discharge of the mud is very low and therefore non-toxic.

Further, the "Draft Environmental Impact Statement" states that an unknown factor is the toxicity to benthic organisms from barium compounds in drilling muds. While these compounds are a major component in drilling muds, Logan et al[20] report their toxicity to be extremely low, essentially zero. As observed above, the rapid dilution by seawater at the point of discharge of the mud renders components non-toxic almost instantaneously. F. T. Weiss[23] observed in his testimony before the Bureau of Land Management hearing in Los Angeles last May that these same barium compounds are the principal ingredients in the "barium enema" or "barium diet" used for X-ray examinations. While they may be unpleasant, they can hardly be considered as toxic materials!

EFFECTS OF PRODUCED WATER DISCHARGES

The discharge from producing platforms of formation waters is discussed in the "Draft Environmental Impact Statement" (for example, pages 342-5, 424) and it is concluded that the impact will not likely be significant, based on dilution of produced waters in the ocean water column, and the patchiness of phytoplankton production in the northern sector of the Gulf of Alaska. In support of that conclusion, it should be noted that an important component of discharged water from a producing platform is oil -- in the 10 to 50 parts per million range -- and as discussed above, chronic exposure of phytoplankton and other marine organisms to low levels

of crude oil is not harmful. In addition to minor amounts of entrained oil, some additional characteristics of produced water noted in the "Draft Environmental Impact Statement" are high salinity, and presence of various metals and non-metals.

Regarding salinity, the GURC study[8] previously mentioned reported salinity measurements at 180 sampling locations in the northern Gulf of Mexico. The observed levels were reported to be within normal ranges according to season of the year. Of course, dilution is the method of detoxification. Dr. J. F. Mackin[25] said, "This dilution in large water bodies and comparatively deep water is almost instantaneous, and dilutions of 1,000 parts of sea water to one of brine can be effected in even comparatively shallow water in distances of from 8 to 50 feet. In off-shore waters in the Gulf or elsewhere, there is no brine problem for that reason."

Various metals and non-metals present in produced water are listed in Table 45a, page 344 of the "Draft Environmental Impact Statement." In addition, trace amounts of other metals have been listed.[26] While all of the trace elements discovered in brines are present in sea water, some of the former could be discharged at higher concentrations. As previously discussed with respect to salinity, dilution would very rapidly, and in a very short distance, render harmless any brine discharge containing even an otherwise toxic concentration of a heavy metal.

SUMMARY AND CONCLUSIONS

In summary, the following conclusions have been stated in my testimony:

1. Any adverse effect of crude oil on phytoplankton is temporary as they regenerate and repopulate quickly after a spill.
2. Chronic exposure of marine life to low levels of petroleum hydrocarbons from crude oil entering the environment does not significantly affect the biota.
3. Laboratory bioassay testing does not simulate the "real world" in any reasonable fashion and, therefore, the results of such studies must be interpreted and applied with extreme caution. "Real world" field studies are a much preferred investigatory route for determining the effects of oil on marine flora and fauna.
4. Drilling muds may contain some additives which are toxic if concentrated; however, in actual practice, rapid dilution in the water column, should they be discharged, renders them negligibly harmful to marine life.
5. At time of discharge, ocean bottom areas covered with drill cuttings will be sterile, but a thriving benthic population will develop.
6. The discharge of formation waters into the ocean from producing platforms does not present any hazard to sea life forms in the water column near the platforms, due to the rapid dilution which occurs.

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PRELIMINARY PROGRAM AND INVITATION

SYMPOSIUM ON

# FATE AND BIOLOGICAL EFFECTS OF OIL SPILLED IN THE MARINE ENVIRONMENT

Sheraton-Park Hotel, Washington, D.C.

May 29-30, 1974

Sponsored by

The American Petroleum Institute

SYMPOSIUM ON

FATE AND BIOLOGICAL EFFECTS

OF OIL SPILLED IN THE MARINE ENVIRONMENT

In 1971, after a careful evaluation of published documents on the fate of oil spills and their ecological/biological effects, the American Petroleum Institute determined that there was a dearth of scientific knowledge on this subject. It was found that the literature was frequently speculative, and contained little experimental evidence. Furthermore, many far-reaching questions of importance to the petroleum industry could not be answered for lack of factual information.

API then launched a comprehensive research program to get these answers. This program has grown during the past three years, and has begun to provide much scientific data on the fate and effects of oil.

To provide a forum for the presentation and discussion of these data by the scientists who are conducting the research, API has scheduled this symposium. It is the hope of API's Task Force on Fate of Oil that this symposium will promote objective evaluation of these projects and the information developed by them. The net result should be of benefit to the scientists involved, to API, and to all who share an interest in the area.

PROGRAM TOPICS AND SPEAKERS

Physical Transport of Spilled Oil

Dr. R. L. Kolpack
University of Southern California

Chemical Analysis for Oil in Water, Sediments, and Tissues

Dr. J. S. Warner
Battelle Memorial Institute
Columbus (Ohio) Laboratories

Biodegradation of Oil

Dr. Rita R. Colwell
University of Maryland

Dr. Leon Petrakis
Gulf Research & Development Co.

Effects of Oil on Phytoplankton

Dr. J. R. Vanderhorst
Battelle Memorial Institute
Pacific Northwest Laboratories

Dr. S. M. Ray
Texas A. & M. University

Toxicity of Oil to Marine Fauna (Flow-Through Bioassay Technique)

Dr. B. E. Vaughan
Battelle Memorial Institute
Pacific Northwest Laboratories

Toxicity of Oil to Marine Fauna (Static Bioassay Techniques)

Dr. J. W. Anderson
Texas A. & M. University

Avian Physiology Research

Dr. W. N. Holmes, Jr.
University of California at
Santa Barbara

Field Studies, Bermuda

Dr. C. D. Gebelein
Bermuda Biological Station for
Research

Field Studies, Santa Barbara

Dr. Dale Straughan
Allan Hancock Foundation
University of California

Field Studies, Buzzards Bay

Dr. A. D. Michael
Marine Biological Laboratory
Woods Hole, Massachusetts

Analytical Method for
Polynuclear Aromatics

Dr. R. A. Brown
Esso Research & Engineering Co.
Linden, New Jersey

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Direct requests for additional
Symposium information to:

Dr. J. R. Gould
Conference Coordinator
Fate and Effects Symposium
Suite 700
1629 K Street, N. W.
Washington, D. C. 20006
(202) 296-3018

## GENERAL SYMPOSIUM INFORMATION

Registration: Attendance at this symposium is by invitation only. All invitees who wish to attend must register in advance. Please complete the enclosed registration card and return by April 10, 1974, with your check (made payable to American Petroleum Institute) to:

Fate and Effects Symposium
Suite 700
1629 K Street, N. W.
Washington, D. C. 20006

Your badge and meeting materials will be held for you at the Symposium Registration Desk (Cotillion Room Foyer, Sheraton-Park Hotel) which will be open as follows: Tuesday, May 28, 6:00 p.m.-8:00 p.m. and Wednesday, May 29, 8:00 a.m. - noon.

Only those who have registered in advance will be able to attend the symposium sessions.

Luncheon: A luncheon is scheduled for Wednesday, May 29, and is included in your registration fee.

Hotel Reservations: A block of rooms at the Sheraton-Park Hotel has been set aside for participants. To ensure confirmed reservations from this block, your request must be RECEIVED BY THE HOTEL no later than May 8, 1974. The hotel reservation card (enclosed) must be mailed as soon as possible to: Sheraton-Park Hotel, Washington, D. C. 20008. An advance deposit or written guarantee of payment is necessary to hold your room if arrival is scheduled after 6:00 p.m. Available accommodations are: Single Rooms $25.00; Double (Twin) Rooms $33.00.

Message Center: A Message Center will be in operation May 29 from 8:00 a.m. to 5:00 p.m. and May 30 from 8:00 a.m. to 1:00 p.m. Please suggest that callers who wish to reach you during these hours ask the hotel operator (202-265-2000) for the Fate and Effects Symposium Message Center. Please check the Message Board periodically.

Badges: Badges are required for admittance to all meetings. Please wear your badge at all times so you will not be delayed at the entrance to a meeting.

NOTES

STATEMENT OF

JESSE P. JOHNSON
MANAGER, SOUTH ALASKA DISTRICT

ATLANTIC RICHFIELD COMPANY

before the

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HEARING ON

PROPOSED OIL AND GAS LEASING

on the

OUTER CONTINENTAL SHELF

NORTHERN GULF OF ALASKA

ANCHORAGE, ALASKA

AUGUST 12-13, 1975

STATEMENT OF JESSE P. JOHNSON, ATLANTIC RICHFIELD COMPANY

OFFSHORE SALE ENVIRONMENTAL HEARING

ANCHORAGE, ALASKA

MY NAME IS JESSE JOHNSON, THE MANAGER OF ATLANTIC RICHFIELD COMPANY'S SOUTH ALASKA DISTRICT. I AM RESPONSIBLE FOR COMPANY OPERATIONS IN SOUTH ALASKA WHICH INCLUDE OUR OPERATIONS IN COOK INLET AND FUTURE COMPANY OPERATIONS IN THE GULF OF ALASKA. I REPRESENT MY COMPANY ON THE GULF OF ALASKA OPERATORS COMMITTEE.

OTHER TESTIMONY EMPHASIZES THAT MEASURES WILL BE TAKEN TO PREVENT OIL SPILLS. THESE MEASURES INCLUDE TRAINING TO REDUCE THE NUMBER OF HUMAN ERRORS, THE INSTALLATION OF SAFETY EQUIPMENT AND POLLUTION PREVENTION EQUIPMENT, AND IMPLEMENTING OPERATION AND INSPECTION PROCEDURES TO ENSURE PROPER FUNCTIONING OF THIS EQUIPMENT. ALTHOUGH WE ARE CONFIDENT THAT SUCH MEASURES WILL PREVENT OIL SPILLS, WE WILL TAKE ADDITIONAL PRECAUTIONS TO PREPARE FOR SUCH AN UNLIKELY EVENT BY PROVIDING PHYSICAL CONTAINMENT (OR SECONDARY CONTAINMENT) WHERE APPLICABLE. THESE MEASURES WOULD BE TAILORED TO THE PARTICULAR FACILITY AFTER A CAREFUL ASSESSMENT OF THE POSSIBILITY OF A DISCHARGE OF OIL.

IF A SPILL OCCURS, OUR IMMEDIATE OBJECTIVE WILL BE TO MINIMIZE ANY RESULTING DAMAGE. EQUIPMENT AND TECHNIQUES FOR DOING THIS HAVE BEEN DEVELOPED AND ARE THE SUBJECT OF MUCH CURRENT RESEARCH. BOTH THE INDUSTRY

AND THE GOVERNMENT HAVE FUNDED, AND ARE CONTINUING TO FUND, PROJECTS TO DEVELOP NEW AND IMPROVED SKIMMING DEVICES, CONTAINMENT BOOMS, AND DISPERSANTS. THE MOST THOROUGH AND CURRENT SINGLE REVIEW AND ASSESSMENT OF THE TECHNOLOGY RESULTING FROM SUCH RESEARCH CAN BE FOUND IN THE PUBLICATIONS OF THE CONFERENCE ON PREVENTION AND CONTROL OF OIL POLLUTION. THE MOST RECENT OF THESE CONFERENCES WAS HELD IN SAN FRANCISCO IN MARCH OF THIS YEAR. THESE CONFERENCES ARE JOINTLY SPONSORED BY THE ENVIRONMENTAL PROTECTION AGENCY, THE UNITES STATES COAST GUARD, AND THE AMERICAN PETROLEUM INSTITUTE.

IN ADDITION TO SUCH TECHNOLOGICAL ADVANCES, THE INDUSTRY IS WORKING IN ANOTHER AREA THAT I CONSIDER EQUALLY IMPORTANT, WHICH IS THE ABILITY TO APPLY TECHNOLOGY RAPIDLY AND EFFECTIVELY. THROUGH THE AUSPICES OF THE AMERICAN PETROLEUM INSTITUTE, AN OIL SPILL SUBCOMMITTEE IS BUILDING EXPERTISE WITHIN THE INDUSTRY. THE API CONTRACTED WITH TEXAS A & M UNIVERSITY TO DEVELOP AN OIL SPILL CONTROL SCHOOL. THE PURPOSE OF THE SCHOOL IS TO TRAIN INDUSTRY PERSONNEL IN SPILL PREVENTION, CONTROL, AND CLEAN-UP TECHNIQUES. A BROCHURE DESCRIBING THE TEXAS A & M SCHOOL IS BEING SUPPLIED WITH THIS STATEMENT FOR THE PERMANENT RECORD. THE SCHOOL BEGAN THIS YEAR, AND A MINIMUM OF 20 SESSIONS WILL BE OFFERED EACH YEAR. THE SCHOOL IS CONDUCTED INDEPENDENTLY OF THE API.

MUCH OF THE PROGRESS IN THE APPLICATION OF CLEAN-UP TECHNIQUES IS DUE TO THE FORMATION OF OIL SPILL COOPERATIVES. COOPERATIVES ENABLE THEIR

MEMBERS TO POOL THEIR RESOURCES, SUCH AS EQUIPMENT, MACHINERY, SUPPLIES AND PERSONNEL. THE COOPERATIVE ITSELF CAN OWN SPECIALIZED EQUIPMENT NOT OWNED BY INDIVIDUAL MEMBERS. SOME OF THESE ORGANIZATIONS PROVIDE THEIR OWN SCHOOLS FOR TRAINING AND DRILLS.

COOPERATIVES HAVE RANGED FROM AN EXCHANGE OF TELEPHONE NUMBERS AND PROMISES OF AID TO TODAY'S MORE SOPHISTICATED COOPERATIVES WHICH ARE COVERED BY WRITTEN AGREEMENTS. A 1972 SURVEY CONDUCTED BY THE AMERICAN PETROLEUM INSTITUTE REVEALED THAT THERE WERE 100 SUCH COOPERATIVES THEN IN EXISTENCE, SUCH AS IN THE LOS ANGELES AREA, HUMBOLT BAY, SAN FRANCISCO BAY, COLUMBIA RIVER AREA IN OREGON, PUGET SOUND AND COOK INLET, ALASKA. ABOUT HALF OF THESE GROUPS WERE COMPOSED OF PETROLEUM COMPANIES ONLY. HOWEVER, MEMBERSHIP IS NOT LIMITED TO PETROLEUM COMPANIES AND OTHERS IN NEED OF COOPERATIVE SERVICES CAN JOIN.

IN ALASKA, TERMINAL OPERATORS, OFFSHORE CRUDE OIL DRILLERS AND PRODUCERS, AND AN ONSHORE CRUDE OIL DRILLER AND PRODUCER, JOINED TOGETHER TO FORM THE COOK INLET OIL SPILL COOPERATIVE. THE EXPERIENCES OF THAT COOPERATIVE WILL BE INVALUABLE TO THE GULF OF ALASKA CLEAN-UP COOPERATIVE.

THE MOST IMPORTANT REASON FOR THE ORGANIZING OF AN OIL SPILL COOPERATIVE IS TO DEVELOP AN INTEGRATED RESPONSE PLAN UTILIZING THE LARGEST POSSIBLE POOL OF EXPERTISE, EQUIPMENT, AND MANPOWER. BY SO DOING, THE TOTAL INDUSTRY EXPERTISE IN A GIVEN AREA IS USED IN PROMOTING READINESS AND

EFFECTIVENESS IN OIL SPILL PREVENTION AND CLEAN-UP. THE EQUIPMENT IS AVAILABLE IN THREE GENERAL WAYS. FIRST, A COOPERATIVE MAINTAINS AN INVENTORY OF THE EQUIPMENT AND MATERIALS OWNED BY INDIVIDUAL MEMBERS. SECOND, A SIMILAR INVENTORY IS MAINTAINED LISTING EQUIPMENT AND MATERIALS AVAILABLE FROM OTHER SOURCES SUCH AS SUPPLIERS AND RENTAL FIRMS. THIRD, SPECIALIZED EQUIPMENT NOT NORMALLY OWNED BY INDIVIDUAL MEMBERS IS PURCHASED BY THE COOOPERATIVE. THE EQUIPMENT OWNED BY THE COOPERATIVE CAN BE MADE AVAILABLE TO NON-MEMBERS. THIS PROVISION CAN BE INCLUDED IN THE AGREEMENT. ALSO, ALL EQUIPMENT OWNED BY THE COOPERATIVE IS AVAILABLE TO THE UNITED STATES COAST GUARD. THE COAST GUARD TAKES CHARGE OF CLEANING UP SPILLS OF UNDETERMINED ORIGIN.

EFFORTS BY THE GULF OF ALASKA OPERATORS COMMITTEE HAVE RESULTED IN 24 COMPANIES COMMITTING TO THE GULF OF ALASKA CLEAN-UP COOPERATIVE. THE REPRESENTATIVES OF THESE COMPANIES MET ON AUGUST 8 AND TRANSACTED BUSINESS NECESSARY TO FORMALLY ORGANIZE AND APPOINT WORK COMMITTEES NECESSARY TO FULFILL THE RESPONSIBILITY OF PROVIDING EQUIPMENT, OPERATING PROCEDURES, AND TRAINING NECESSARY TO CLEAN UP AN OIL SPILL IN THE GULF OF ALASKA. A FIVE-MAN EXECUTIVE COMMITTEE, INCLUDING MYSELF AS CHAIRMAN OF THE CO-OP, WAS ELECTED. A LEGAL SUBCOMMITTEE WAS APPOINTED TO RECEIVE COMMENTS AND MAKE NECESSARY CHANGES IN THE DRAFT AGREEMENT WHICH IS BEING FILED WITH THIS STATEMENT. AN ENGINEERING COMMITTEE WAS APPOINTED TO REVIEW CLEAN-UP EQUIPMENT AND PROVIDE A RECOMMENDATION FOR OBTAINING SAME FOR

THE COOPERATIVE. INVENTORIES CARRIED BY SEVERAL EXISTING COOPERATIVES ARE BEING FILED WITH THIS STATEMENT AS EXAMPLES OF EQUIPMENT TO BE CONSIDERED. THE NEED FOR SPECIAL OR LARGER VERSIONS OF SKIMMING EQUIPMENT NOW BEING USED HAS BEEN REVIEWED BY THE GULF OF ALASKA OPERATORS COMMITTEE AND THE CO-OP ENGINEERING SUBCOMMITTEE WILL TAKE OVER THE RESPONSIBILITY OF OBSERVING THE TEST TANK MODEL STUDIES BY MARCO POLLUTION CONTROL. THIS WILL BE DONE TO DETERMINE A SUITABLE SELF-PROPELLED SKIMMING VESSEL FOR USE IN THE GULF OF ALASKA. THE MODEL TESTING OF TWO-HULL CONCEPTS WILL BE COMPLETED THE END OF THIS MONTH (AUGUST) AND A REPORT WITH RECOMMENDATIONS WILL BE COMPLETED THE END OF SEPTEMBER. THE GULF OF ALASKA CLEAN-UP COOPERATIVE IS EXPECTED TO COMMIT FOR ENGINEERING DESIGN AND DRAWINGS AND THEN FOR THE CONSTRUCTION OF THE OPEN OCEAN SKIMMING VESSEL. WHEN BUILT, THIS SKIMMER, TO OUR KNOWLEDGE, WOULD BE THE LARGEST SUCH VESSEL IN OPERATION IN OCS WATERS.

THE OPEN OCEAN SKIMMING VESSEL IS THE TYPE OF SPECIALIZED EQUIPMENT OWNED OR CONTRACTED FOR BY A COOPERATIVE. IN ADDITION, THE COOPERATIVE WILL PROVIDE FOR CONTAINMENT BOOMS, SORBENT MATERIALS, SURFACE TENSION MODIFIERS TO RETARD THE NATURAL TENDENCY OF OIL TO SPREAD RAPIDLY ON THE WATER SURFACE, AND THE EQUIPMENT TO DEPLOY AND USE THESE MATERIALS. THE COOPERATIVE, OR THE COMPANIES OPERATING SHORE-SIDE SUPPLY BASES, WILL PROVIDE OIL SPILL CONTAINMENT AND CLEAN-UP EQUIPMENT FOR SPILLS WHICH MAY OCCUR AT THESE BASES. AT THE PRESENT TIME, SHORE-SIDE SUPPLY BASES ARE PLANNED AT YAKUTAT AND CORDOVA.

I WILL NOW SHOW SOME SLIDES DEPICTING SOME OF THIS EQUIPMENT. PHOTOGRAPHS DEPICTING THIS EQUIPMENT ARE BEING SUPPLIED FOR THE PERMANENT RECORD. (SEE ATTACHMENT "A" FOR DESCRIPTIONS.)

IN SUMMARY, PRECAUTIONS WILL BE TAKEN TO PREVENT OIL SPILLS AND, IN THE UNLIKELY EVENT A SPILL DOES OCCUR, CONTINGENCY PLANS AND A COOPERATIVE WILL BE IN EFFECT TO RESPOND PROMPTLY AND THOROUGHLY. INITIALLY THE PLANS AND EQUIPMENT WILL BE THOSE NECESSARY DURING EXPLORATORY DRILLING OPERATIONS. EXPANSION OF THE CO-OP WILL OCCUR, IF AND WHEN COMMERCIAL PRODUCTION IS ESTABLISHED, TO INCLUDE PRODUCTION PLATFORMS, OFFSHORE AND/OR ONSHORE CRUDE OIL SHIPPING TERMINALS, PIPELINES, SHORE-SIDE SUPPLY BASES, AND ALL SUCH ACTIVITIES DEVELOPED TO PRODUCE CRUDE OIL AND GAS IN THE GULF OF ALASKA.

ATTACHMENT "A"

| SLIDE NUMBER | DESCRIPTION |
|---|---|
| 1. | Open Ocean Skimmer. Conceptual outboard profile of Marco Class VI Catamaran ship to be model tested for the GOAOC. |

| | |
|---|---|
| Length O. A.: | 108' -0" |
| Beam O. A.: | 40' -0" |
| Displacement: | 300 Long Tons |
| Sweep Width | |
| Free: | 28' |
| With Water Spray Boom: | 60' |
| Oil Slops Capacity: | 1000 Barrels |
| Horsepower: | 1500 to 2200 |
| Range: | 3250 Miles @ 13 Knots |
| | 2300 Miles @ 14 Knots |
| Crew Accommodations: | 7 (5 required) |

2. Open Ocean Skimmer. Conceptual outboard board profile of Marco Class IV reversible ship. Combination monohull-Catamaran Marco design to be model tested for the GOAOC.

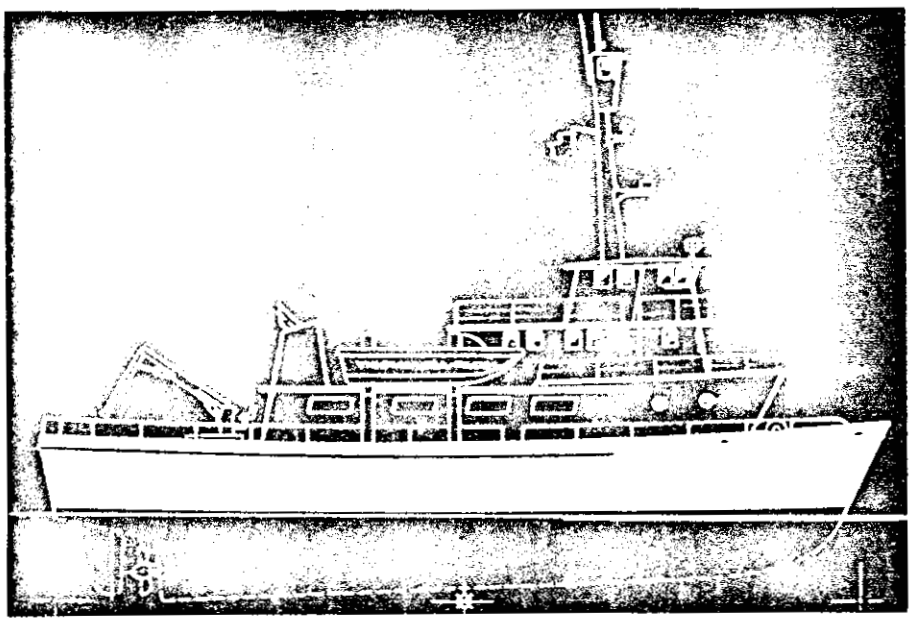
| | |
|---|---|
| Length: | 106' -0" |
| Beam O. A.: | 30' -0" |
| Displacement: | 275 Long Tons |
| Sweep Width | |
| Free: | 20' |
| With Water Spray Boom: | 50' |
| Oil Slops Capacity: | 1000 Barrels |
| Horsepower: | 850 |
| Range: | 4000 Miles @ 12 Knots |
| Crew Accommodations: | 7 (5 required) |

3. Catamaran Harbor and Bay Skimmer. Profile of Marco Class III skimmer in use in San Francisco Bay Area by Clean Bay, Inc. Experience gained with this skimmer will be used in the design of the skimmers in Slides 1 and 2.

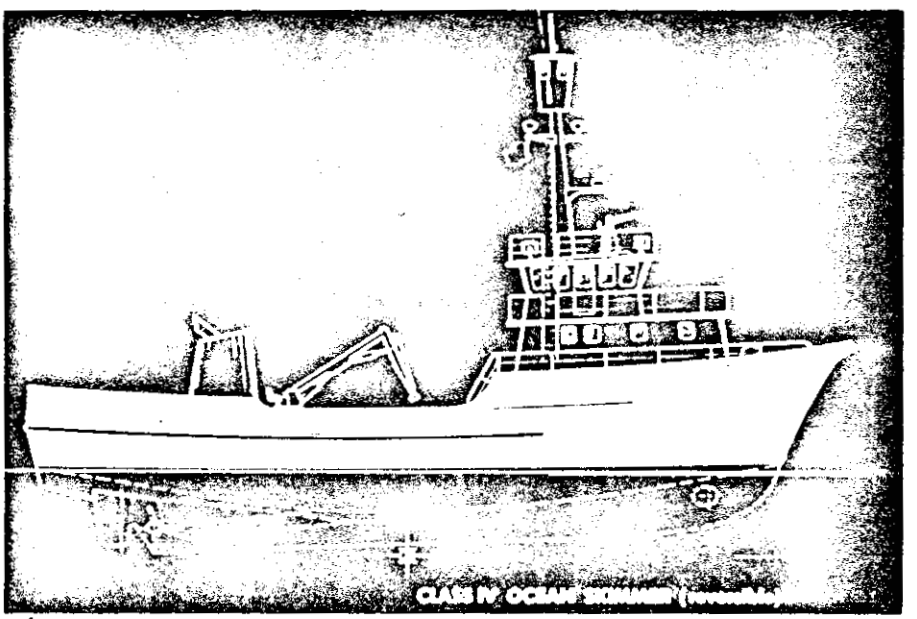
4. Catamaran Harbor and Bay Skimmer. Bow view of Marco Class III skimmer in use by Clean Bay, Inc. in the San Francisco Bay Area by Clean Bay, Inc. showing water spray booms. The water spray booms increase the sweep width from 16' (free) to 45'.

5. Vikoma Sea Pack Containment Boom. Fast response containment boom. The containment boom and inflation equipment are contained in a 23 foot boat hull. Boom lengths up to 1600 feet. Transportable by air or highway and can be towed on the water at speeds up to 4 knots. Boom is deployed from boat hull at the spill site.

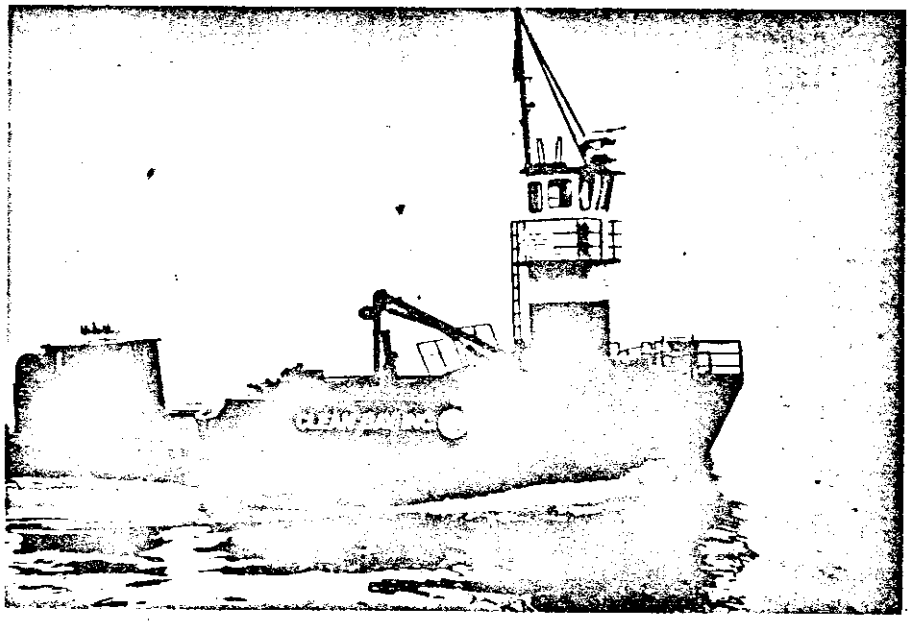
| SLIDE NUMBER | DESCRIPTION |
|---|---|
| 6. | Vikoma Sea Pack Containment Boom. Boom deployed. |
| 7. | Vikoma Sea Pack Containment Boom. Boom deployed. |
| 8. | Containment Boom in Storage Trailer. Fabric reinforced plastic skirt boom with plastic foam floats. Trailer stows 1000 feet of boom, floating type oil skimmers and pump. Air and highway transportable. |
| 9. | Containment Boom Deployed. Boom in Slide 8. deployed. |
| 10. | Floating Skimmers. Skimmers of the type stowed in trailer in Slide 8. Skimmers are effective in shallow water to 3" depth for use along shore lines. Floats keep hose on the water. |
| 11. | Containment Boom in Storage Boxes. Fabric reinforced plastic boom with plastic foam floats. Open ocean boom. Each box contains 100 feet of boom. |
| 12. | Containment Boom Deployed. Boom in previous slide deployed. |
| 13. | Sorbent Boom. Preferentially absorbs oil and repels water. Absorbs crude oils, fuel oils, and lubricating oils. |
| 14. | Sorbent Boom Deployed. |
| 15. | Sorbent Sheets. Preferentially absorb oil and repel water. Absorb crude oil, fuel oils, and lubricating oils. |



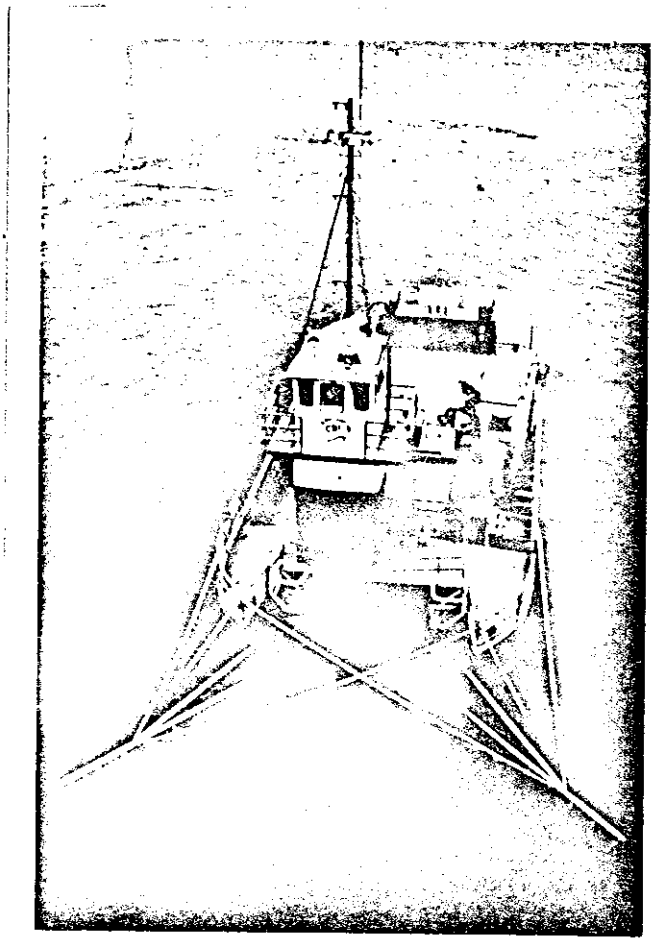
SLIDE - PHOTO 1.
OPEN OCEAN SKIMMER



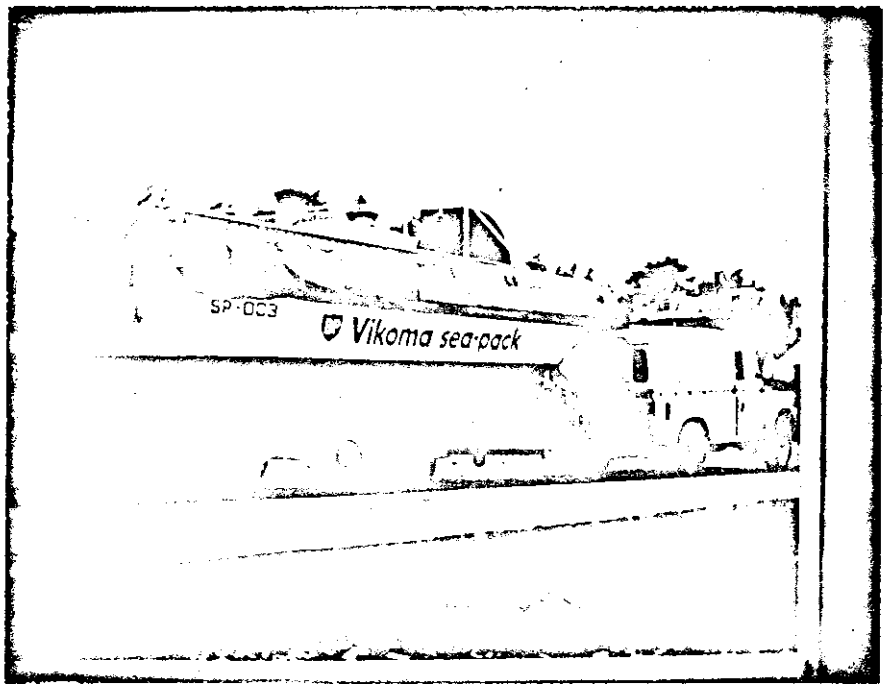
SLIDE - PHOTO 2.
OPEN OCEAN SKIMMER



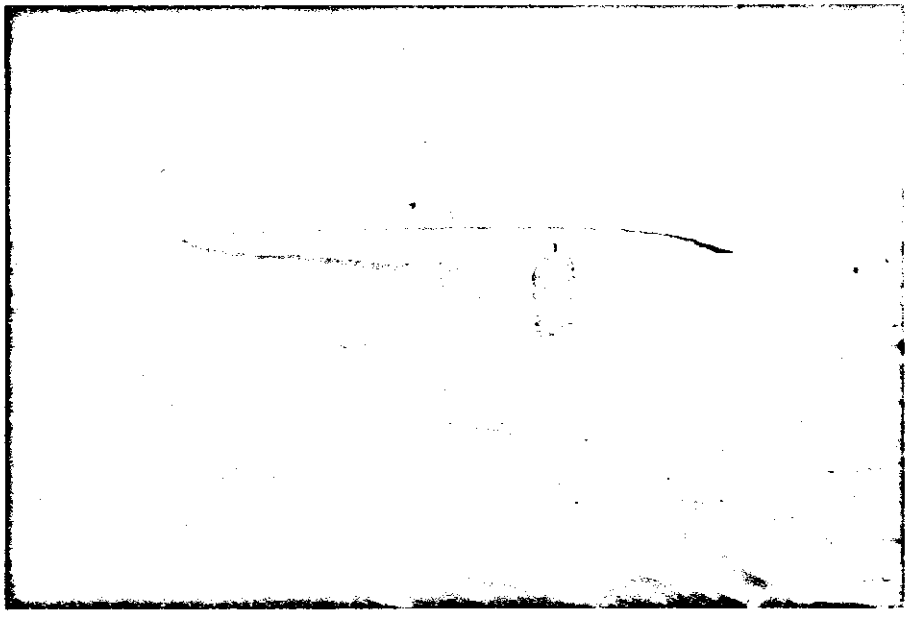
SLIDE - PHOTO 3.
CATAMARAN HARBOR AND BAY SKIMMER



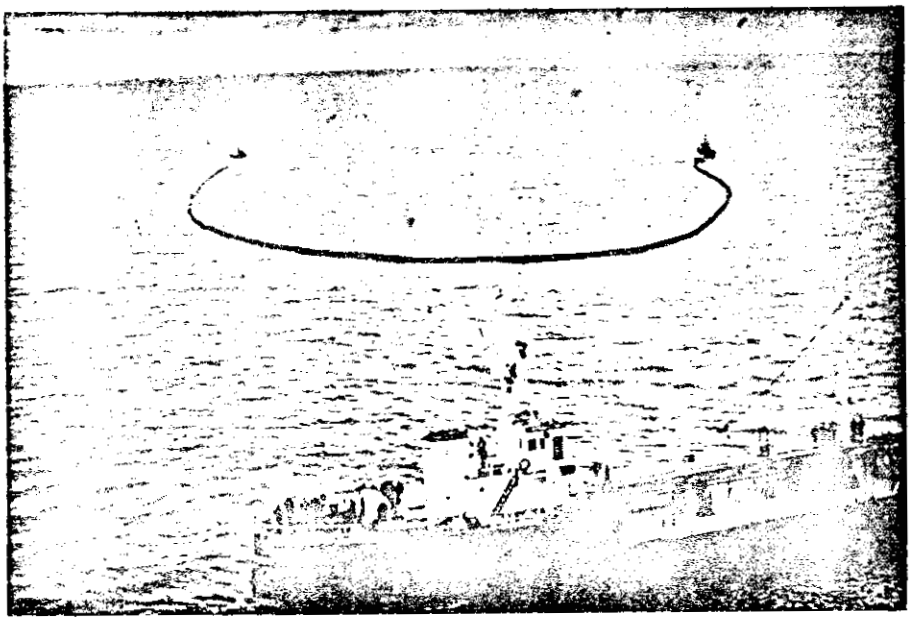
SLIDE - PHOTO 4.
CATAMARAN HARBOR
AND BAY SKIMMER



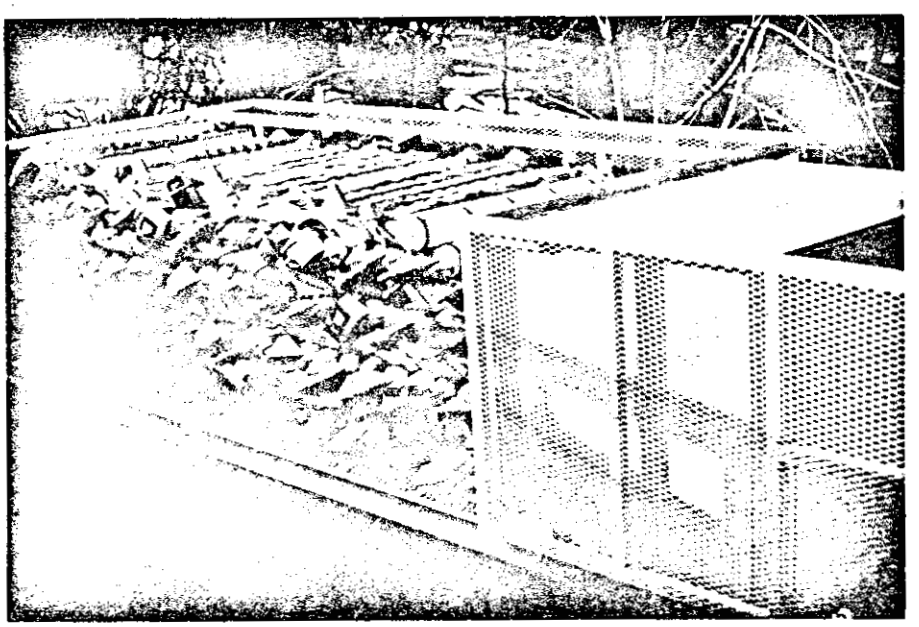

SLIDE - PHOTO 5.
VIKOMA SEA PACK CONTAINMENT BOOM



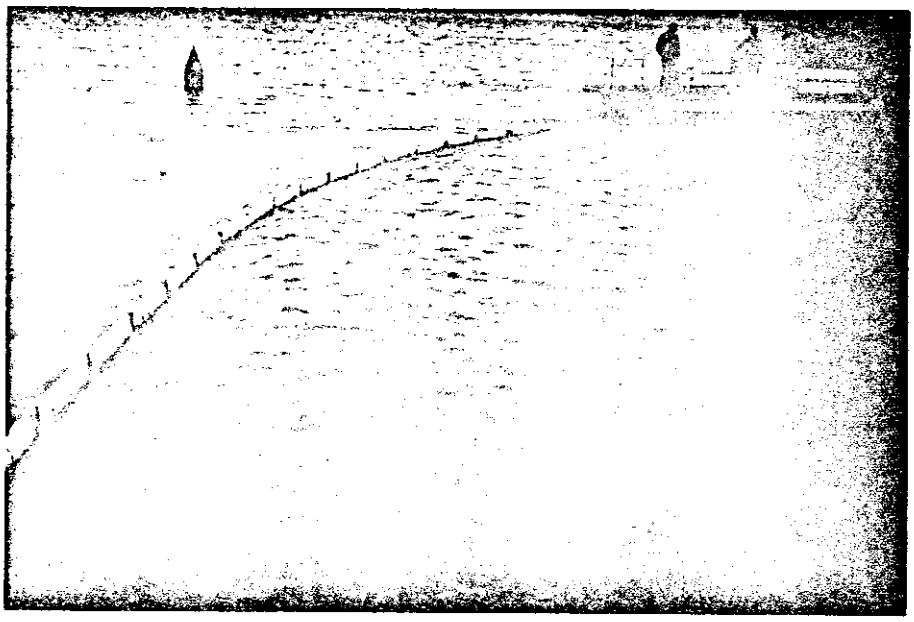
SLIDE - PHOTO 6.
VIKOMA SEA PACK CONTAINMENT BOOM



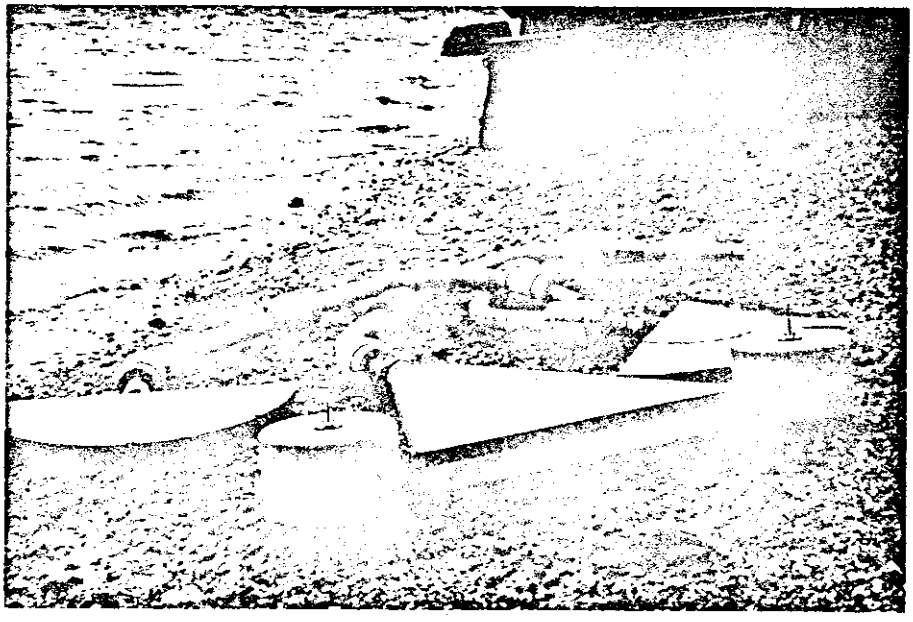
SLIDE - PHOTO 7.
VIKOMA SEA PACK CONTAINMENT BOOM



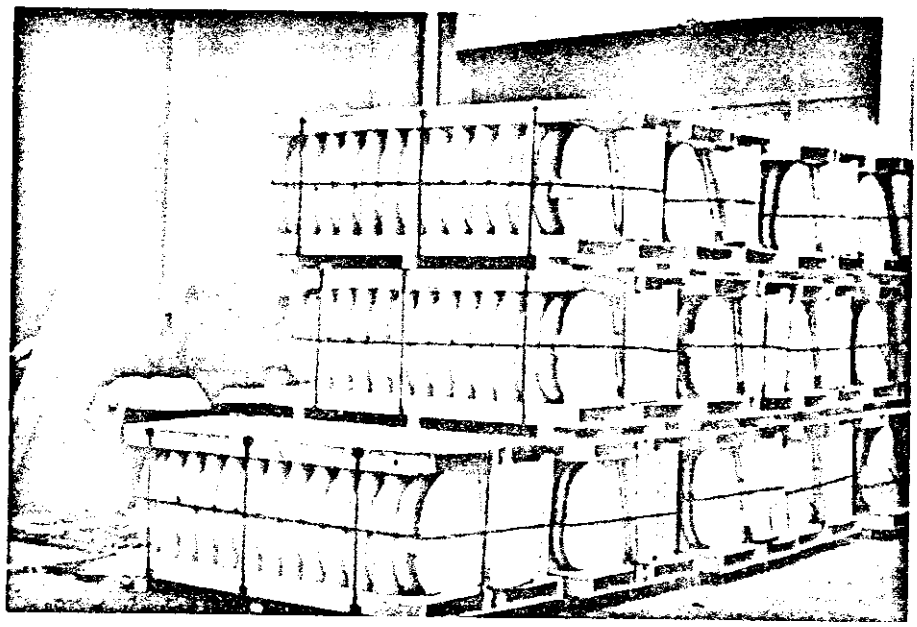
SLIDE - PHOTO 8.
CONTAINMENT BOOM IN STORAGE TRAILER



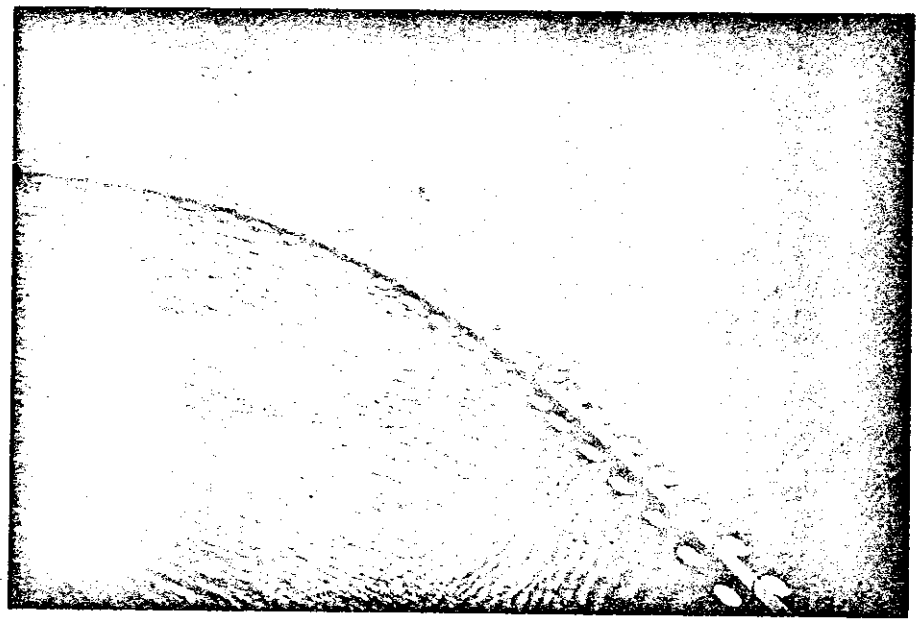
SLIDE - PHOTO 9.
CONTAINMENT BOOM DEPLOYED



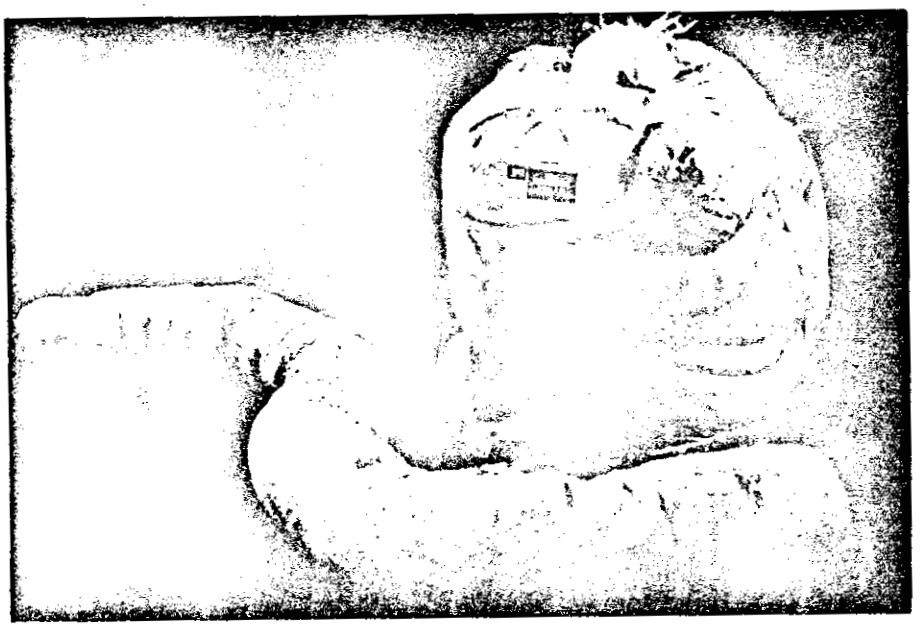
SLIDE - PHOTO 10.
FLOATING SKIMMERS



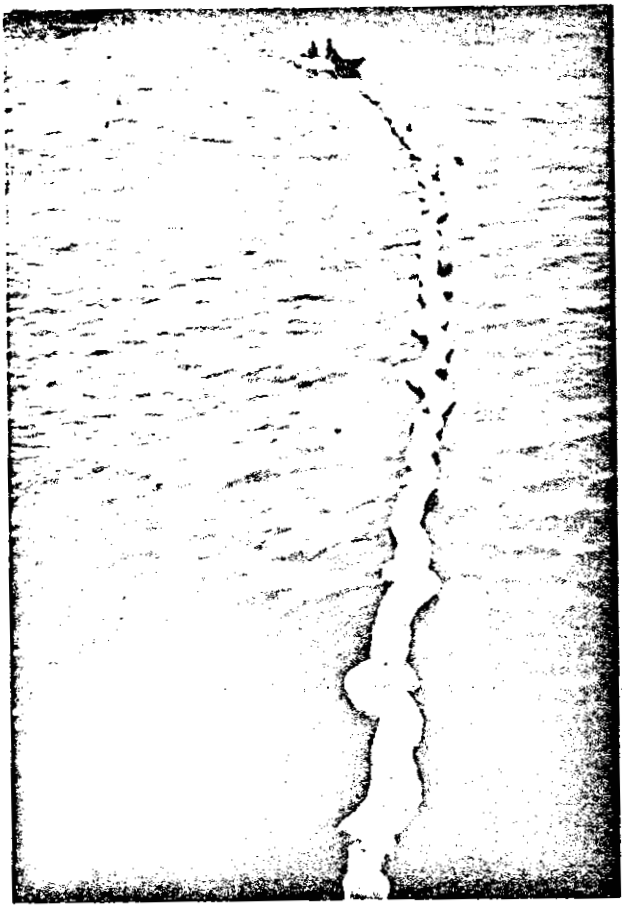
SLIDE - PHOTO 11.
CONTAINMENT BOOM IN STORAGE BOXES



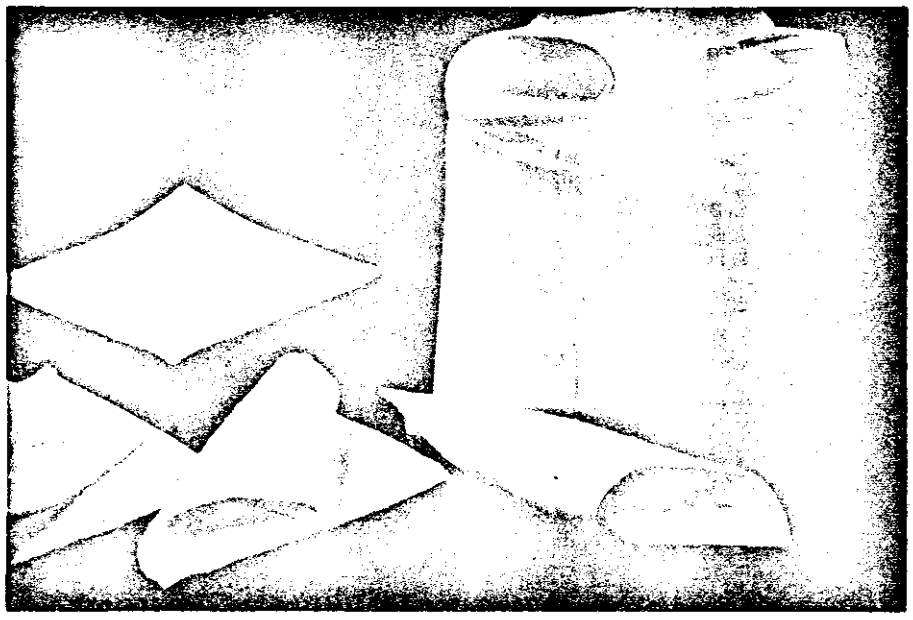
SLIDE - PHOTO 12.
CONTAINMENT BOOM DEPLOYED



SLIDE - PHOTO 13.
SORBENT BOOM



SLIDE - PHOTO 14.
SORBENT BOOM DEPLOYED



SLIDE - PHOTO 15.
SORBENT SHEETS

ATTACHMENT "B"

Inventory of Equipment

Clean Gulf Associates

## A. Fast Response Open Sea and Bay Skimmer System

This is a portable system designed for boat mounting. It consists in part of a floating oil boom, skimmer, outrigger, pump and storage tanks. The system is designed to provide equipment capable of fast response to emergency spill situations.

I. A. For use as immediate response system for offshore spills in accordance with 12-hour response provisions contained in lease agreements for certain offshore tracts recently acquired by member companies.

B. Locations

1. One complete system located at Venice.

2. One complete system located at Intracoastal City.

C. For use on boats of 65 feet or larger in the utility or work boat class. (See page 2 for details.)

D. Maximum recovery capability with both tanks is 360 barrels fluid.

E. For general use in seas up to 3-4 feet and water depths greater than 6-8 feet; specific use will depend on individual spill situations.

II. Equipment consists of six packages

A. Primary skid (23' x 7 1/2') containing:

One 180 barrel tank (Coast Guard approved)
One Lister SR 2 Diesel Engine
One Gorman-Rupp 4 x 4, 500 GPM pump
One outrigger for oil boom
One stern davit for launch and recovery of skimmer

B. Auxiliary skid (23' x 5 1/2') containing:

One 180 barrel tank (Coast Guard approved)

C. One Don Wilson skimmer (triangular 9' x 9' x 10')

D. One lot of Bennett oil boom sections - consisting of three 5 foot sections, nine 10 foot sections and one 15 foot section.

E. One lot of 4" hose lines - One 40' length; one 20' length; two 10' lengths.

F. One tool box complete with miscellaneous tools, shackles and other items essential for launch, recovery and maintenance.

## B. HIGH VOLUME OPEN SEA SKIMMER SYSTEM

Central to this system is a barge specially modified to carry, deploy, and retrieve all components of a boom and skimmer system (except tugs) as shown in DWG No. CGA Hoss-1. The barge is constructed with a skimmer ramp and boom stingers on the aft-end. Launching and retrieval of these components are facilitated by a ballast system on the aft-end of the barge. Launching and retrieving of the skimmer and boom occur with the barge in the ballasted mode. The barge is de-ballasted for skimming.

The barge is towed to the worksite. The lead end of the barge is reversed, and two other tugs attach to the lead ends of boom to assist in deployment. With the booms and skimmer deployed, and booms spread, as in DWG No. CGA Hoss-1, the system is towed through the oil to be picked up into the mouth of the skimmer. Oil entering the skimmer is picked up and pumped to the separation and storage tanks located on the barge.

1. Use and Design Criteria

   a. Equipment - Intergrated system consisting of Bennett Offshore Booms, Union Oil Type Skimmer and 52' x 160' x 12' barge. See DWG Nos. CGA Hoss-1 & 2.

   b. Personnel - 14 to 16 including a superintendent, leadman and mechanic when deploying or retrieving boom and skimmer.

   c. Auxillary Equipment (supplied by Operator) - 1 - 1200 hp tug to transport barge and control on location.
      2 - 600 hp tugs to drag boom while skimming.

   d. Design Criteria

      (1) 36" draft approximately 12' water depth required while ballasted

      (2) Approximately 4 knots maximum towing speed with all components on barge

      (3) 5 foot maximum sea for skimming operations

      (4) Approximately 1 knot current relative to barge movement for skimming operations

      (5) U. S. Coast Guard Certified Vessel Class - unmanned barge

      (6) Fuel supply - 3 days on barge. 4 - 250 gallon diesel fuels are located on the barge above the boomracks (Refer to DWG No. CGA Hoss-2)

(7) Personnel quarters - none

e. Location - Halliburton dock at Grand Isle, Louisiana

2. Equipment List (see DWG No. CGA Hoss 2 & 3)

a. Air compressor - 1 Ingersoll Rand-600 ft.$^3$/min @115 psi. Prime mover-GM, V-6, 210 HP @1700 rpm, diesel engine; battery started.

b. Separation and storage tanks - 4 - 500 bbls., primary tanks with 380 bbls. behind Weir on each tank (shown in black on DWG No. CGA Hoss- 2 ).

c. Generator - 2 - 25 KW w/Lister air cooled, HR-3 diesels rated at 37.5 HP at 1800 rpm.

d. Lighting system (see DWG No. CGA Hoss-3)

Barge service lights - 1000 watt, mercury vapor lights are pole-mounted on each side of the barge. 400 watt, mercury vapor lights are located on each side of the barge under the superstructure near the skimmer. Smaller cage protected lights are abundantly distributed along all walkways, boom racks, work areas and sheds.

Navigational Lights

Running lights are located on each side of the barge bow.

Working lights are pole mounted above the storage tanks on the barge bow. The three lights (uppermost-red, middle-clear, bottom-red) are the international markings for a dredge. Use the bottom red light only if offloading oil at night. A red flag hoisted to the bottom light indicates offloading oil during daylight hours.

Anchor and stern lights (both clear lens) are located on the stern above the superstructure, over the skimmer.

e. Winch system (see DWG Nos. CGA Hoss-2 & 3)

Air powered - position 1 winches are used to assist in raising and lowering the stinger and stabilizing the skimmer during launch and retrieval. Position 3 winches are used in retrieving the boom.
Position 4 winches are used to help deploy, connect and disconnect the boom and skimmer during launch and retrieval.
Position 5 winches (DWG No. 3) are used to raise and lower the stinger.
Position 6 winch is used to control the skimmer suction and return hoses during launch and retrieval.
Position 7 winch is used to launch and retrieve the skimmer.
Position 8 winches are used to control boom launch and retrieval.

Hand winches -

Position 2 winches (DWG No. 2) located on the front end of the skimmer are used for connecting and disconnecting the boom to the skimmer during launch and retrieval. Although not shown in the drawings, hand winches are located near the piping headers, at each side of the aft end of the skimmer ramp, at the forward end of the skimmer and in the middle of each stinger to assist in boom launch and retrieval.

f. Pumps (see DWG No. CGA Hoss-2)

2 - 2000 gpm centrifugal (pumps P-A and P-B; 40-60' head) 8" x 8" powered by GM 271 diesel engines rated 65 HP at 2000 rpm; hydraulic started. Hand pump hydraulic system to 2500-3000 psi before starting the engines.

g. Piping system (see DWG Nos. CGA Hoss-4, 5, & 6)

Ballast (DWG No. 4) - Take suction through sea chest valve to 38.4' x 52' x 12' hull tank compartment inlets designated as A, B, C, and D.

Manifold (DWG No. 5) - Pump lines from the skimmer to the storage and separation tanks are 8". The overflow line carrying separated water from the tanks back to the skimmer is 10".

Transfer (DWG No. 6) - Transfer lines from primary to secondary separation tanks are 6".

h. Booms - 2 - 500' sections Bennett Offshore Boom (see DWG No. CGA Hoss-6-A)

i. Skimmer - Union Oil Type (see DWG No. CGA Hoss-7)

j. Communications system - 5 fm radio handsets and 2 megaphones

3. Operational Procedure

a. Deployment (total time approximately 6 hours)

(1) Position barge; use lead tugs to assist.

(2) Ballasting Barge - Approximately 1½ hours @ max. pump speed. Check ballast manifold; make sure proper valves are opened or closed. Don't leave seacock open. Ballast until the sea just meets the forward end of the barge.

NOTE: All engine oil is series 3-30 wt.
Air compressor oil is DEXRON hydraulic transmission oil.
All air motors on winches use SAE 20 oil with a viscosity of 250/350 SUS at 1000°F., a carbon residual of 0.3% and a neutralization No. 0.1.

## C. Shallow Water Skimmer System, Grand Isle Unit

### GENERAL DESCRIPTION

This unit is a self-contained shallow-water skimmer. The vessel is 24' long by 11'-4" wide by 9'-10" high and is propelled by two 125 hp Johnson outboard engines. It weighs 9000 lbs. and can be transported on a Lowboy truck. The unit is basically a floating API separator and the basic skimming mechanism is that employed in the High Volume Open Sea Skimmer System. Four 10 bbl. storage tanks are built into the hull. The vessel draws 8" of water with the hull tanks empty and 20" with all four filled. Two pumps are manifolded so that one can be used for skimming, the other for offloading, jetting oil from beneath docks, etc. Metal outrigger booms allow the vessel to sweep an area up to 20' wide. Connection points are provided for attaching commercial booms if a wider sweep is desired. The metal booms fold in to form a bow for travel. Maximum travel speed is five miles per hour. The maximum skimming speed is from one to two miles per hour.

In order to increase the oil handling capacity of the system and provide a means of transferring the oil from the skimmer to shore without shutting down the skimming operation, two 50 bbl. floating separation and storage units are available for use with the skimmer. The floating units can be moved to and from the location by conventional shallow water boats or a lugger. These units are 18' long by 11' wide by 3' high. The units weigh 8000 lbs. each and both can be transported on a flat bed truck.

### DESIGN CAPABILITIES

1. Self-propelled by two 125 hp outboard engines.

2. For mobile skimming in calm shallow water bays and inland protected waters. Can maneuver to chase spills in shallow waters.

3. When deployed with conventional shallow water booms this unit can remain stationary to pick up spills moving under the influence of tides or winds.

4. Can be used in water depths as shallow as 12" for short periods. Vessel draws 8" of water empty and 20" when all four 10 bbl. storage tanks are full.

5. Effective skimming is limited to use in wave heights of one foot or less. It is not suited for use in open Gulf waters or very choppy inland waters.

### TRUCK TRANSPORTABLE

1. Dimensions, 24' long by 11'-4" wide, 9'-10" high, weight is 9000 lbs.

D. Auxiliary Shallow Water Skimmers and Boom

Several individual pieces of equipment are provided for skimming oil which is contained by inshore boom, isolated in dead end canals, at dockside or other areas accessible from boat, barge or on foot. Two Parker Oil Hawgs will be kept at Grand Isle. Two Swiss Olea III type skimmers will be maintained at Venice. Intracoastal City will have one skimmer of each type. Drawings CGA Aux. 1 and 2 show the application of these units.

Parker Oil Hawg Skimmer
200 GPM Diesel Driven, Skid Mounted, Centrifugal Pump

Design Capabilities

1. Works well with any grade of oil ranging from Distillates through Cold Bunker C.

2. Is fully controllable from ashore, or from a boat or barge.

3. Eliminates the hazards of a power source on the skimmer.

4. Is easily cleared of trash.

5. Has inherent stability.

6. Will skim oil at the full capacity of the pump where the oil depth will allow.

7. Can be operated by unskilled personnel.

8. Limited to calm, shallow water, inland canals, docks, rivers, etc.

   Not to be used until the oil layer is reduced to one-half inch or less.

Location

1. Grand Isle, La. - Two oil Hawg skimmers

2. Intracoastal City - One oil Hawg skimmer

3. Can be hauled by truck or boat.

Personnel Required

1. Two-man crew is required.

2. No training necessary.

Note: Only one pump is available at each Base. The units are designed to be run by an air compressor or hydraulic pump. No air compressor is supplied. Each unit can be driven by rental air compressors supplying from 20 to 80 SCFM at 100 psi.

D. Auxiliary Shallow Water Skimmers and Boom (continued)

Swiss Olea III Skimmers
200 GPM Diesel Driven, Skid Mounted, Centrifugal Pump

Design Capabilities

1. Works with any grade of oil.
2. Is fully controllable from ashore, or from a boat or barge.
3. Stable floating.
4. Can be operated by unskilled personnel.
5. Limited to calm, shallow water, inland canals, docks, rivers, etc.

Location

1. Venice, La. - Two Swiss skimmers.
2. Intracoastal City - One Swiss skimmer.
3. Can be hauled by truck or boat.

Personnel Required

1. Two-man crew is required.
2. No training necessary.

Note: Only one pump available at each location.

D. Auxiliary Shallow Water Skimmers and Boom (continued)

Inshore Boom

Available both at Grand Isle and at Venice are 1,000 feet of 36 inch Bennett Inshore boom. This is on pallets mounted for helicopter transport. An anchor system is included.

1. This boom can be deployed in relatively calm waters to control oil movement into undesirable areas.

2. It can be used in conjunction with the auxiliary skimmers listed prior.

3. Can be transported on pallets of approximately 500 feet each by helicopters of Bell 204 size or larger. Weight of each skid is approximately 2,500 pounds. It may also be transported by truck or barge.

   PHI helicopter personnel are familiar with the loads and can advise on its movement by helicopter.

4. It will usually be deployed by a crew boat, by pulling off a pallet positioned on the beach, or from a barge by anchoring boom and pulling barge out from under it.

5. This boom is similar though not as large as that employed in the HVOSS system. (Figure CGA Aux. 3)

6. Personnel requirement to deploy is four roustabouts and a pusher.

## E. Helicopter Spray System - HUSS Unit

### GENERAL DESCRIPTION

The HUSS (Helicopter Underslung Spray System) unit is a helicopter supported spray unit such as those used for crop spraying. The unit is used to spray surface collecting agents or dispersants. The unit is a self-contained tank and pump unit with the spray nozzles mounted below the tank. The tank has an 84 gallon capacity. The spray is controlled from a control box that is mounted on the cyclic stick of the helicopter. The detailed brochure titled SHELL OIL HERDER which is included herein shows the HUSS equipment mounted under a helicopter in the application section. This brochure also contains information for using this surface active agent in containing oil spills, while recovery procedures are in effect. Handling and application recommendations are also included. It is emphasized here that the using member company is required to obtain authority from the Federal On-Scene Coordinator and the appropriate regulatory agencies, federal, state and local, before any chemicals can be used.

### DESIGN CAPABILITIES

1. Used to spray collecting agent, Oil Herder*, or dispersant.

2. Tank has 84 gallon capacity.

3. Application of chemicals

   a. Apply Oil Herder in a fine stream at a rate of 2 gallons per mile of slick perimeter.

   b. Apply dispersant in a spray, 84 gallons of dispersant will cover 1,000,000 sq. ft.

4. Recommended flying speeds

   a. Flying to and from slick - 50 MPH
   b. Spraying speed - 30-40 MPH

5. One hour is required to get unit ready.

   a. Mount control box in 47G or 206 helicopter.
   b. Fill unit with collecting agent or dispersant, get pump ready, mount the unit, etc.

### LOCATION

1. Grand Isle, La. - one complete unit

2. Venice, La. - one complete unit

*Shell Trademark

# HELICOPTER UNDERSLUNG SPRAY SYSTEM (HUSS)
## LIST OF SPARE PARTS INCLUDED WITH UNIT

| No. | Description | Manufacturer's Name & Part No. |
|---|---|---|
| 1 | Motorized Gate Valve With Teflon Seals | Whittaker 18-30V 103437 |
| 2 | Spark Plugs | Champion GJ-6 |
| 1 Set | Points | Wico X 14270C |
| 1 | Condenser | Wico X 16329 |
| 1 | Pump Seal | Homelite 62694 |
| 1 | 2 Pc. Trailer Connection | Echlin TC6206-7 or Substitute |
| 80 | Tee Jet Tips No. 8002 | Spraying Systems Tee-Jet |
| 80 | Tee Jet Tips No. 8006 | Spraying Systems Tee-Jet |
| 10 | Diaphragms For Nozzles | Spraying Systems Fairprene |
| 6 | Nozzles, c/w Caps & 50 Mesh Screens | Spraying Systems #8360 |
| 16 | Aluminum Blanks For Nozzles | Spraying Systems |
| 2 | 1/4" Drain Cocks | Paulin Co. or Substitute |
| 1 | Pressure Switch | Stewart-Warner (Hobbs) M-4009-15 |
| 1 | 1/4" Pipe Plug | - |
| 10 Ft. | 2 - 5 Ft. Lengths - Nylon Starter Cord | - |

EQUIPMENT

Water Fowl Rehabilitation

1. Scare Away Propane Guns

A. The following equipment is available to deter waterfowl:

48 automatic propane bird scare-away guns complete with regulators and tank (in carrying case) (12 guns per case)

B. The automatic propane guns are designed to scare waterfowl away from an oil spill. Their range is about 1/3 mile. This spacing or closer should be used for initial operations. Experience may dictate a closer spacing if birds are observed in the area.

C. The automatic propane guns are located as follows:

__24__ propane guns are located at Grand Isle

__24__ propane guns are located at Venice

The scare-away guns can be mobilized by filling the propane tanks, installing a flint and transporting to the spill location. Each propane tank holds 5 gallons of propane. Carrying cases have been built for 12 propane tanks and 12 guns. The barrels have been removed for ease of transportation.

D. In operation the guns are spaced about 1/3 mile apart in the contaminated area. They operate completely automatic. The tank of propane will last for 2 to 4 weeks depending on the frequency of the shots. Initially a 3 to 5 minute shot frequency should be used.

E. The scare-away guns are lightweight, portable and may be deployed by trucks, boats or helicopter. Twelve complete guns have been packaged to be deployed at one time by helicopter. This is the quickest and easiest way to deploy the propane guns. The only routine servicing required is replacing the flint, corrosion protection and filling the propane tank.

The flint in the ignitor requires replacement about once each week. At this frequency the unit should be protected from corrosion by spraying with a silicone lubricant like WD-40. This weekly maintenance can be performed by two men plus transportation.

F. Operation of the propane guns will not require training of personnel. Each member company should appoint one supervisor to observe operation of the scare-away gun. This would include filling the propane tank, replacing the flint, adjusting the firing frequency and placing the gun in operation.

2. Fast Response Waterfowl Rehabilitation Station

A. The following equipment and materials are available to rehabilitate waterfowl should they become oil soaked.

1. Portable Fast Response Waterfowl Rehabilitation Station. (An inventory of rescue and rehabilitation materials is tabulated by Table WF-1)

B. The portable waterfowl rehabilitation station is designed for fast response to rehabilitate contaminated waterfowl. The portable station provides the facilities to transport birds to the most convenient bird-care center shown on the map Figure WF-2. The station can be moved by trailer or boat and includes the necessary materials to clean and rehabilitate birds. State and Federal approval must be obtained to collect and rehabilitate waterfowl. The following should be contacted.

Federal Bureau of Sport Fisheries and Wildlife
Fred Williams or Jack Frost - (404) 526-5100 - Atlanta, Ga.
and David Hall (504) 527-2611, Ext. 6139 or 527-6139 - New Orleans, La.

Louisiana Wildlife and Fisheries Commission
Dr, J. Burton Angelle (504) 527-5126 - New Orleans, La.

C. The fast response rehabilitation station is located at Grand Isle.

D. Detailed instructions on collecting, transporting, cleaning, and rehabilitation of water fowl are included in API booklet "Operations Rescue" (WF-3). A comprehensive list of equipment, supplies, and personnel requirements for a large scale rehabilitation center is included in the paper "Implementation of Operations Rescue" by Bill Ayers and Phil Stanton (WF-4).

E. The fast response rehabilitation station will require the following operating personnel depending on the number of birds involved:

1 to 2 Trained Supervisors
2 to 8 Bird Cleaners and Attendants

If a large number of waterfowl are contaminated it will be necessary to immediately implement "Operations Rescue" (WF-5)

## INVENTORY

## RESCUE AND REHABILITATION MATERIALS

1 First Aid Kit
12 Clear Goggles
Box Rubber Bands
Box Cotton Swabs
2 Tubes A & D Dintment
2 Folding Tables
50# Rags
1 Card File Holder w/cards
1 Wheelbarrow
1# Boric Acid Powder
1 Roll Visqueen Plastic Sheeting
12 Aprons
1 Tool Chest
1 Socket Set (WSB-14)
1 Wrench Set (7)
2 Steel Tapes
12 Chick Feeders
6 Hose Nozzles (Garden)
4 Scrub Brushes
6 25' ∅ 5/8" Garden Hose
1 Post Hole Digger
1 Bird Banding Set of Assorted Pliers and Bands (Numbered)
2 Drums Polycomplex A-11
1 S & R Shovel
2 8# Sledge Hammers
1 Roll Bailing Wire
24 Pair Rubber Gloves
2 5 Gallon Water Coolers
2 BR22 Flash Lights w/Batteries
12 Cans Misquito Spray
24 Bars Soap
12 Bottles Hand Lotion
5 Packages Freezer Bags
2 20 Gallon Garbage Cans
2 Garden Rakes
6 #3 Galvanized Tubs
1 Jumbo Galvanized Water Trough
12 Handled Fish Nets
6 8 Quart Buckets
1 lb #8 Galvanized Nails
1 lb #12 Galvanized Nails
1 lb #16 Galvanized Nails
1 Roll, 600', 1/4" Polypropylene Rope
1 Hand Saw

**Table WF-1**

**3-25-74**

1 16 oz. Hammer
1 24" Wrecking Bar
2 Pair 410 Snips
2 Pair 210 Pliers
2 Aluminum Scoops
1 Pitch Fork
1 IBI Shovel
2 Roll 2" x 5' Fence Wire (Poultry), 300'
50 Fence Posts
2 Wall Thermometers
6 30" Mirror Nets
12 Timbers, 4" x 6" x 8'
1 Case Single Fold Paper Towels
4 Rolls, 2" Duct Tape
2 Ø 48 Quart Ice Chests
12 Bottles Murine eye wash
12 Ø 1 Quart Mason Jars
3 Deck Brushes w/Handles
3 25' Water Resistant Extension Cards

G. Miscellaneous Material Inventory

The following list of material will be maintained at location indicated.

| Quantity | Nomenclature | Location |
|---|---|---|
| 200 pads | Polyurethane Foam | Venice<br>Grand Isle |
| 2 drums | Oil Herder | Venice (z)<br>Grand Isle |

(z) For use with Helicopter Underslung Spray System

## H. Portable Foam Generation Equipment

These five skid, helicopter transportable packages for generating polyurethane foam will be maintained at Grand Isle, Venice and Intracoastal City. The equipment is available as of August 13, 1973.

Basic equipment is on skids as follows:

1. Mixing equipment.
2. Chemical barrels - foam constituants.
3. Compressor - to provide air for process.
4. Wringer - to squeeze used foam for reuse.
5. Incinerator - to burn foam after use (Grand Isle only).

An expanded section on operating instructions will be supplied at a later date.

ATTACHMENT "C"

Inventory of Equipment

Clean Seas, Inc.

# 2700 - RESOURCES

This section lists a great majority of the items of containment and cleanup equipment, materials, and services plus support equipment and services, that might be needed in coping with a major oil spill. Most of the member companies have also stockpiled various types of oil spill cleanup equipment that would be made available.

The following sub-sections contain:

2701 - Inventory of Clean Seas Owned Equipment

2702 - Absorbents - Collecting Agents

2703 - Aircraft - Helicopters - Fixed Wings

2704 - Booms

2705 - Chemicals - Dispersants

2706 - Contractors - Manpower - Beach Cleanup

2707 - Disposal Sites - Oil & Oil Soaked Trash

2708 - Divers - Underwater Welding

2709 - Heavy Equipment - Trucks, Cranes, Bulldozers, Graders

2710 - Marine Equipment - Boats, Barges, Tugs

2711 - Skimmers

2712 - Trailer Rentals

2713 - Special Services and Supplies



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## 2701 CLEAN SEAS - INVENTORY OF OWNED EQUIPMENT

| MATERIAL AND/OR EQUIPMENT | STORAGE AREA | QUANTITIES | REMARKS | CONTACTS |
|---|---|---|---|---|
| **2701.01 Mark II Skimmer System** | | | | |
| 1. Mark II Skimmer | CSI Yard - Carpinteria | 2 | All grades of oil can be recovered at rates up to 200 gallons per minute in light to moderate sea state | (805)963-3488<br>(805)684-4719 |
| 2. 80 Barrel Vacuum Tank | " " " | 1 | | |
| 3. Suction Hoses - 3" | " " " | 150' | | |
| **2701.02 CSI Skimmer System** | | | | |
| 1. Skimmer 45'x 17'x 6' | Anchored - S.B. Harbor | 1 | The system is capable of recovering all grades of oil from light to bunker fuel at rates up to 2000 gallons per minute. It will operate successfully in moderate sea states, 20-K winds and towing speeds up to 1 1/2 K. | See above |
| 2. 30" Kepner Sea Curtain Boom | On Skimmer | 480' | | |
| 3. 100 Bbl. Tanks | CSI Yard - Carpinteria | 2 | | |
| 4. Oil and Water Pumps | " " " | 3 | | |
| **2701.03 Sea Dragon System** | | | | |
| 1. Sea Dragon Skimmer 45'x 26'x 8' | Anchored - S.B. Harbor | 1 | Heavy duty, moderate volume skimmer(45' long and with a 26' beam). The system will recover all grades of oil and large amounts of solid materials. It is operable in a moderate sea state and winds up to 25 K. | See above |
| **2701.04 Bottom Tension Boom** | | | | |
| 1. 4'x 13' floats, 8'curtain | CSI Yard - Carpinteria | 1000' | Use as containment boom in heavy seas. Curtain in 250' lengths on spools. B-T line in 500' lengths on spools. Booms can be used in 500' lengths or multiples of 500'. | See above |
| **2701.05 Floating Weir Skimmers** | CSI Yard - Carpinteria | 3 | 6' diameter floating weirs with air driven Acme-type pumps. Use in conjunction with B-T Boom or may be used independently. Will not handle debris. Handles most oils. | See above |



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# 2701 CLEAN SEAS - INVENTORY OF OWNED EQUIPMENT

| MATERIAL AND/OR EQUIPMENT | STORAGE AREA | QUANTITIES | REMARKS | CONTACTS |
|---|---|---|---|---|
| 2701.06 Medusa Skimmer | CSI Yard - Carpinteria | 1 | 10' diameter, gasoline engine drive. Handles light oil in calm waters only. No debris | (805)963-3488<br>(805)684-4719 |
| 2701.07 Vikoma Seapack Assembly | CSI Yard - Carpinteria | 1 | Immediate response containment boom. The 23' hull containing 1600' of inflatable seaboom can be towed to the oil slick at high speed. The boom can be fully operational within 12 minutes of arrival onsite. | See above |
| 2701.08 Kepner Sea Curtain | | | | |
| 1. 480' (240'per unit) | CSI Yard - Carpinteria | 480' | | See above |
| 2. 2000' 8"x12"(400'per unit) | " " | 2000' | | |
| 3. 2000' 16"x12"(200'per unit) | " " | 2000' | | |
| 2701.09 Barge - Tide Mar VII | Anchored offshore Santa Barbara | 1 | 160'x39'x13' Tank Barge, 7800 bbl. capacity in 10 tanks. Has 6 diesel driven pumps and 2 diesel driven 50 KW generators. | See above |
| 2701.10 Absorbent-Collecting Agent | | | | |
| 1. Strickite NOT Licensed | CSI Yard - Carpinteria | 142-35lb.bags | Good sorbent for all grades of oil. | See above |
| 2. Shell Oil Herder Licensed | CSI Yard - Carpinteria | 8-5 gal.cans | Good sorbent for all grades of oil. | See above |
| 2701.11 Boat (work) | Santa Barbara Harbor Marina #1, Slip #19 | 1 | 19' Larson Fiber Glass with 125HP Johnson motor. Not safe in adverse weather. | See above |



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# 2701 CLEAN SEAS - INVENTO... OF OWNED EQUIPMENT

| MATERIAL AND/OR EQUIPMENT | STORAGE AREA | QUANTITIES | REMARKS | CONTACTS |
|---|---|---|---|---|
| 2701.12 Chemicals | | | | |
| 1. Gold Crew (Dispersant) | CSI Yard - Carpinteria | 4-55gal drum | Good cleaning agent and dispersant. Not licensed. | (805)963-3488<br>(805)684-4719 |
| 2701.13 Compressor | CSI Yard - Carpinteria | 1 | Gardner-Denver 600 cfm rotary diesel engine driven. | See above |
| 2701.14 Radio System | | | | |
| 1. Repeater-Motorola | Santa Ynez Peak | 1 | 49.04/48.62 - 45 watts | ----- |
| 2. Santa Barbara base | St. Barbara office | 1 | 49.04/48.62 43 " | ----- |
| 3. Carpinteria base | CSI Yard - Carpinteria | 1 | 49.04/48.62 - 50 " | ----- |
| 4. Portable base | " " " | 1 | 49.04/48.62 - 48 " | ----- |
| 5. Portable - Handie Talkie | " " " | 13 | 49.04/48.62 - 5 " | ----- |
| 6. Mobile | 1971 Ford | 1 | 49.04/48.62 & 48.66/49.42 - 50 " | ----- |
| 2701.15 Wilden M-15 Pump | CSI Yard - Carpinteria | 2 | For use on the MK-II Skimmers and miscellaneous pump requirements. | |
| 2701.16 Flat storage tanks 100 bbl. | CSI Yard - Carpinteria | 4 | Used with MK-II Skimmers or other systems. | |



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ATTACHMENT "D"

Inventory of Equipment

Clean Bay, Inc.

## 801 CBI CLEANUP EQUIPMENT AND MATERIALS

### 1. MOBILE HEADQUARTERS TRAILER

8' x 25' Office Trailer w/tandem axle

Callout Procedure

Gulf Oil Company-California will provide a driver and vehicle to deliver the trailer at any time to a location as directed by Clean Bay Inc. or a member company. Union Oil Company will provide a vehicle and driver for backup service.

Calls should be placed in the order shown below. Union Oil Co. should not be called unless Gulf is unable to furnish a driver. All Gulf members should be exhausted first.

Calling Procedure

1. Shift Foreman (415) 758-4840
   Gulf Oil Company-Calif. Ext. 268

   Shift Foreman will notify a driver to deliver the CBI trailer to the requested site.

2. Bulk Shift Foreman (415) 799-2478
   Union Oil Company 799-4411

   Shift Foreman will notify a driver to pick up the CBI trailer at Gulf and deliver it to the requested site.

A list of the equipment in the trailer follows:

801 CBI OIL SPILL CLEANUP EQUIPMENT AND MATERIALS

Mobile Headquarters Trailer

Equipment List

| Quantity | Item |
|---|---|
| 1 | Intech Marine Base Station on Marine Channels 10,16, 18A & 22A |
| 1 | Motorola UHF Mobile Radio |
| 1 | Intech Scan Receiver on Marine Channels 10, 16, 18A, 22A & WXI |
| 3 sets | Headphones, Superex and Motorola |
| 10 | 1-Watt Motorola Handi-Talkies (Paksets) |
| 2 | 4-Watt Motorola Handi-Talkies (Paksets) |
| 1 | Motorola Multi-Unit Portable Charger |
| 1 | Onan Trickle Charger |
| 1 | Onan Gasoline Generator |
| 1 | Sony Cassette Tape Recorder |
| 1 | Craftsman Multi-Band Receiver |
| 2 | Motorola Megaphones |
| 2 | McGill Trouble Lights |
| 1 | 50' Extension Cord, McGill & Hubble |
| 1 | 100' ITT Extension Cord |
| 3 | "Scare-Away" Noise Units/Propane Supply |
| Numerous | Hardhats |
| 1 | J-W Combustible Gas Indicator |
| 18 | Pint Sample Bottles |
| 12 | Hand Lanterns |
| Numerous | Hand Tools |

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Mobile Headquarters Trailer

Equipment List (continued)

| Quantity | Item |
|---|---|
| 2 sets | U.S.G.S. Maps of CBI Area of Coverage |
| 2 sets | Nautical Charts of CBI Area |
| Numerous | Road Maps |
| Numerous | Tide and Current |
| 1 | Petroleum Pipeline Map |
| 6 | Map Overlays, 36" x 48" Clear Plastic |
| Numerous | Telephone Books |
| 1 pr. | Binoculars |
| 1 | Dymo 2300 Tapewriter Kit |
| 1 | Polaroid 430 Camera |
| Numerous | Stationary Supplies |
| 12 | Raincoats |
| 1 | Blanket |
| 2 sets | Emergency Road Reflectors |
| 27 | Emergency Road Flares (15-min.) |
| 4 | Fire Extinguishers |
| 1 | First Aid Kit |

## 2. M/V RECOVERER

202', 9,000 bbl. petroleum cargo tanker capable of acting as:

- Command ship
- Primary control for cleanup, skimming, or lightering operations
- Central receiving vessel for off-loading skimmers
- Central receiving vessel during lightering
- Communications center
- Central location for crew changes
- Supply ship
- Central repair and maintenance facility
- First aid center
- Storage, transport and/or deployment of:
  - Skimmers
  - Booms
  - Dispersants
  - Sorbents
- Vacuum pumping capacity. Two pumps at least 1200 BPH each

(See Tank Plan (801-5) and Operation Plan (801-6 - 801-9)

### Callout Procedure

In order to call out the M/V Recoverer, calls should be made to one of the following in the order shown:

| | |
|---|---|
| R. W. Norton, CBI | (415) 685-2800 (24-hr.) |
| R. E. Nichols, HT&B | (415) 398-1150 (office)<br>376-1998 (home) |
| Harbor Tug & Barge Co.<br>Pier 41 - Dispatcher | (415) 982-1600 (24-hr.) |

## 3. OIL CONTAINMENT BOOM

### A - Kepner Sea Curtain Boom

2000' - 16" Float x 12" Curtain, 3/8" Chain weight in curtain

This boom is stored in two (2) 1000' sections complete with towing bridles; each 1000-ft. section in a 35' semi-trailer van at Royal Trucking Co. (address & phone below).

Each trailer has five sections, 200' each, of Kepner boom bolted together making a 1000' boom. The boom is packed for easy deployment. One end of the boom with towing bridle attached is at the rear door and ready to be pulled out by boat. A second towing bridle is located near rear door. The trailing end of the boom is free so the two booms can be bolted together for a 2000' boom or install the towing bridle for a 1000' boom.

NOTE: The boom trailers are not licensed. When boom is ordered out, a Trip Permit is required. A Trip Permit is obtained from the Department of Motor Vehicles for $5.00 per vehicle per trip. Royal Trucking Co. has a permit for each vehicle and they should be reminded to fill it out and handle according to instructions before moving each trailer-van.

Royal Trucking (415) 934-0190 or
1420 Royal Industrial Way 689-6441
Concord, CA 94520

Roy Querio (Home) (415) 939-6057

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B - Submarine Engineering Associates

1600' - 36PFX Sea Boom, 12" Freeboard x 24" Draft with mooring plates, anchors and USN-SEALOC Adapters

This boom is stored in four (4), 25' x 8' x 4'5" containers in the CBI Warehouse, Royal Trucking yard, Concord, and can be obtained through CBI or Royal.

C - Pacific Pollution Control

500' - 24C Aquafence Boom, 12" Freeboard x 24" Draft

This boom is stored in five (5) fiberglass containers, 30" x 46" x 90" in the CBI Warehouse, Royal Trucking yard, Concord, and can be obtained through CBI or Royal.

D - Sayles Boom

2 - 100' sections, 36" Sayles Boom with towing attachments, stored on the M/V SPILL SPOILER to be used as diversion booms for the skimmer. Boom not to be removed from the vessel.

E - Vikoma Seapack & Seaboom

1600' - Ocean Boom, 27" Float x 17" Water Tube, stored in 23' boat on a trailer. Can be towed on road to launching site or boat can be towed on water at high speed.

VIKOMA stored at Merritt (415) 982-1600
Ship Repair Yard, Oakland (415) 893-7020

In order to call out the VIKOMA, calls should be made to one of the following in the order shown:

| | | |
|---|---|---|
| R. W. Norton, CBI | (415) 685-2800 | (24 hr.) |
| R. E. Nichols, HT&B | (415) 398-1150 | (office) |
| | 376-1998 | (home) |
| Harbor Tug & Barge Co. Pier 41-Dispatcher | (415) 982-1600 | (24 hr.) |

## 4. PUMPING EQUIPMENT

### A - Tanker Lightering Equipment

1 - 40 HP air-cooled diesel engine prime mover mounted in a fiberglass container.

2 - 8" submersible turbine pumps, capacity of each pump is 1000 GPM through 1000' of 6" and 8" discharge hose.

1600' of 8" floating discharge hose

800' of 6" " " "

Accessory equipment for handling pump and driver.

Tanker lightering equipment is stored on board the M/V RECOVERER at Merritt Ship Repair Yard, Oakland, and is handled through the Harbor Tug and Barge Company.

Pier 41 - Dispatcher (415) 982-1600 (24 hr.)
Merritt Shipyard (415) 893-7020

### B - Diaphram Pumps

2 - Wilden M15B Spark Free, Diaphram Pumps, 3" Kamlok inlet and outlet, compressed air driven, 150 GPM @ 100# air pressure.

These pumps with related air hose and fittings stored in CBI Warehouse at Royal Trucking Yard. Obtain through CBI.

(415) 685-2800 (24 hr.)

### C - Oil Herder Helicopter Spray Pumping Unit

1 - Simplex Pumping Unit. Consists of a fiberglass bucket, 150 gal. capacity, 3 HP Briggs & Stratton gas engine and small gear pump, set at 1 GPM flow rate. Designed as helicopter undersling unit.

This pumping unit, plus 2 drums of Shell Oil Herder is temporarily stored at the CBI Warehouse in Concord (until contract is made with helicopter company). Obtain through CBI.

(415) 685-2800 (24 hr.)

## 5. SKIMMING EQUIPMENT

### A - Marco Class III Oil Recovery System

1 - M/V SPILL SPOILER - A 57' x 24' jet propelled bay skimmer with 2-3' wide Martin-Marietta filterbelts and 90 bbls. onboard storage capacity. Capable of recovering all grades of oil and debris at oil recovery rates up to 1,000 GPM, in 3' to 4' waves.

Moored at Pier 41, San Francisco

Manned and operated by:

The Harbor Tug and Barge Company
24-hr. Dispatcher (415) 982-1600

### B - Floating Weir Skimmers

2 - Exxon Floating Weir Skimmers for use in recovering fairly thick oil concentrated within a boom.

Each skimmer equipped with an air driven pump, 200' of Acme 4" discharge hose with hose floats and 150' of 1" Dayco air hose.

This equipment was designed to work in conjugation with a barge. An air compressor is required, min. size of 300 CFM, to handle both units. A davit or crane is necessary to deploy these units.

Skimmers are stored at CBI Warehouse at Royal Trucking and are available through CBI (24-hr.).

6. SORBENTS, TOOLS, ETC.

A - 35' Semi-Trailer Van - Sorbent Trailer

This van is stored at Royal Trucking Co. who furnish a tractor and driver to deliver the van as instructed by CBI on a 24-hr. basis.

NOTE: The Sorbent Trailer is not licensed. When sorbents are ordered, a Trip Permit is required following the same procedure as when calling out the boom trailers. (See 3-A, Page 801-10.)

Royal Trucking
1420 Royal Industrial Way
Concord, CA 94520

(415) 934-0190 or
689-6441

Roy Querio (Home) - (415) 939-6057

Inventory of Equipment & Supplies in Sorbent Trailer

(See following pages 801-15/16)

## Sorbent Trailer Inventory

| Quantity | Item |
|---|---|
| 5 | Ball Peen Hammers, 1¼# Channel lock or equal |
| 6 | 10" Diamoloy crescent wrenches, or equal |
| 2 | 30" MCC Bolt Cutters |
| 36 | ½" Shackles w/screw pin, galv. |
| 36 | 3/4" Shackles w/screw pin, galv. |
| 24 | 5/8" x 1½" long machine bolts w/hex nuts |
| 2 | 30" or larger tool box to store Items 1-7; Kennedy or equal |
| 600 ft. | ½" Manila rope (1 coil) |
| 600 ft. | 3/4" Manila rope (1 coil) |
| 600 ft. | 1" Manila rope (1 coil) |
| 200 ft. | ½" wire rope, 6 x 19, black |
| 2 | Morse model 85A drum carrier |
| 2 sets | #52 Merrill drum lifter clamps |
| 10 | 6' steel stakes |
| 2 | 2 lb. rolls baling wire |
| 2 pr. | Kline side-cut pliers |
| 10 pr. | Heavy gloves; rubber lined gauntlet-type, work gloves, large size |
| 12 | Long-handle square point shovels |
| 3 | " " round point shovels |
| 1 | Sledge hammers - #8, long handle |
| 1 | Single bit axe |
| 2 | Ansul A-5, 5 lb. fire extinguisher, w/Foray dry chemical, or equal |

Sorbent Trailer Inventory (cont.)

| Quantity | Item |
|---|---|
| 1 | Standard Medical First-Aid kit |
| 2 | 4-5 tine, long-handle pitchforks |
| 17 | Hoes |
| 8 | Long-handle sickles |
| 14 | Short-handle sickles |
| 6 | Garden type rakes |
| 1 | Chain Saw |
| 1 | 8-point regular carpenter's saw |
| 1 | 24" Pruning saw |
| 2 | 30 gal. trash cans, galv. metal |
| 2 | Stanley razor blade knives |
| 6 | 2-cell regular flashlights |
| 10 rolls | 3M Type, 100 rolls, 36" wide, 12 oz/yd$^2$, 3/8" thick |
| 10 bales | 3M Type 151 pads, 18" x 18" x 3/16" |
| 8 rolls | Conwed Sorbent Blankets, 35" x 200' roll |
| 12 ctns. | " " Pads, 17" x 17" x 1/4" |
| 4 rolls | " " Rug, 40" x 300' roll |
| 8 ctns. | " " Heavy duty boom, 10" x 8' |

## 7. PORTABLE RADIO REPEATER TRAILER

This radio repeater trailer can be used in conjunction with the radio packsets in remote areas to improve communications. It contains a primary and secondary radio repeater and has two batteries which make the repeater independent for 48 hours. If available, 110 VAC should be connected to the self-contained battery charger.

Radio repeater trailer is stored at Royal Trucking. Obtain through CBI. The CBI car is equipped with towing attachment for towing trailer to desired location.

## 8. WORK BOAT

1 - 16' Boston Whaler w/40 HP Johnson outboard

This boat is primarily a ship-to-shore boat for the M/V RECOVERER but is available for oil spill work if the Recoverer is not in use.

To increase the flexibility of the boat, it is stored on a trailer in CBI warehouse at Royal Trucking and will be towed to the M/V Recoverer when needed or to other oil spill work.

A 1-7/8" ball is required for towing. An electrical plug with identified leads is with the trailer.

Towing and operating instructions on boat. (See also following Pages 801-18/19)

Both the CBI company car and R. E. Nichols' company car are fitted with towing gear to tow this boat and trailer to desired location.

## 9. WAREHOUSE INVENTORY

In addition to equipment and supplies listed, there are other items stored in the CBI Warehouse located at: Royal Trucking
1420 Royal Industrial Way
Concord, CA

Following is an inventory list of items available through Clean Bay Inc.:

| Quantity | Item |
|---|---|
| 1 roll | Plastic 20' x 100' x .006" |
| 6 rolls | Conwed Rug, 40" x 300' |
| 7 " | " Blanket, 35" x 200' |
| 10 ctns. | " Pads, 17½" x 17½" x 1/4" |
| 9 " | " Boom 10" x 8' |
| 10 ea. | Empty Boom crates |
| 1 | Radio repeater trailer (Item No. 7) |
| 1 | Boston Whaler & trailer(Item No. 8) |
| 5 | Floatation boxes for lightering equipment (Equipment on M/V Recoverer) |
| 2 boxes | Repair equipment for Kepner boom (Item No. 3-A) |
| 2 | Exxon skimmers w/air & discharge hoses (Item 5-B) |
| 1 | Skimmer (Skim, Inc.) |
| 6 | Boom towing cables |
| 1 set | Fork lift extensions |
| 2 | 15-men life rafts (inspection needed before use) |
| 2 ctns. | Foam absorbent pads |

Warehouse Inventory (cont.)

| Quantity | Item |
|---|---|
| 2 | Wheelbarrows |
| 2 | Bbls Oil Herder (Partially full) |
| 1 | " Diesel oil (Partially full) |
| 1 | Pallet containing boxes of manual inserts |
| 11 | Pallets of 3" vacuum hose |
| 2 | " " 1½" " " |
| 7 | " containing bags of sawdust |
| 12 | Pitchforks |
| 6 | Square-corner shovels |
| 4 | Round-corner shovels |

## 10. EQUIPMENT UNDER LEASE TO CBI

Contractor: Marine Service, Inc. (707) 745-2949 (24-hr.)
305 First Street J. L. Garske
Benicia, CA 94510

Equipment located at Marine Service, Benicia:

2 Mark II Oil Skimmers
1 56' LCM Boat,"Sponge"

Equipment located at Shell Oil, Martinez:

1 Mark II Oil Skimmer

Equipment located at C&H Sugar Co. Wharf, Crockett:

2 Mark II Oil Skimmers
1 56' LCM Boat, "Squeegee"

ATTACHMENT "E"

Draft

Agreement for Alaskan Gulf Clean-Up Cooperative

AGREEMENT

FOR

ALASKAN GULF CLEAN-UP COOPERATIVE

THIS AGREEMENT shall be effective when made and entered into, by and between ten (10) or more parties which execute the original of this Agreement or a counterpart hereof or other instrument agreeing to become a party hereto, being hereinafter sometimes referred to collectively as "Participants."

W I T N E S S E T H

WHEREAS each of the parties hereto has an interest, both financial and civic, in the prompt and efficient removal of oil spills occurring on or in the public and private properties, beaches, harbors, and offshore islands and waters within the Area of Interest; and

WHEREAS, the parties desire to provide resources for and to develop, maintain, and improve the procedure among the parties for mutual assistance and cooperation in the control of oil spill emergencies occurring within the Area of Interest; and

WHEREAS, the parties desire to commit themselves to an efficient and effective clean-up organization, and in so doing, agree to investigate and acquire appropriate equipment and materials, and to develop training programs for personnel who will be involved in the clean-up of oil spills; and

WHEREAS, due to the magnitude of the anticipated risks and costs related to the acquisition or lease of materials and equipment, the parties deem it necessary to join together under the terms of this Agreement for the purpose of sharing said costs and risks and minimizing the individual expenses and investments related thereto;

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and agreements of the parties hereto, hereinafter set forth, the parties do hereby mutually covenant and agree as follows:

## ARTICLE I

## AREA OF INTEREST

The primary operations of the parties shall be confined to the geopgraphical area described as:

> the public and private properties, including but not limited to beaches, harbors, inland waterways, and offshore islands and water along the coast of the State of Alaska, between and including Cape Fairweather on the east and Cape Clear on the west,

which area shall hereinafter be referred to as the "Area of Interest;" provided, however, that nothing herein shall preclude the parties from contracting or cooperating with persons or organizations in other geographical areas for the purposes set forth in the recitals above.

## ARTICLE II

## PARTICIPANTS

A. Qualifications. Persons, partnerships, companies, corporations or other entities which contemplate operating refineries, terminals, pipelines or other facilities for handling, storing, transporting, or manufacturing petroleum or liquid hydrocarbons or which drill for or produce petroleum or liquid hydrocarbons or which contemplate conducting operations related thereto within the Area of Interest and which pay the initial advance as well as any costs related to subsequent joinder and which pay costs and expenses incurred in operations hereunder in accordance with the Participation Formula described in Article VI shall be qualified for Participation herein.

B. Voting Rights. The number of votes of the Participants may be unequal, and shall be determined by the Participation Formula described in Article VI.

C. Admission of New Participants. New Participants shall be admitted upon a showing to the Representatives that such potential Participants are qualified for membership hereunder. Such new participation shall be effective upon receipt by the Executive Committee of the inital advance required by the Participation Formula described in Article VI and in the case of a partnership or corporation the filing of the written designation of representation by such Participant as required by Article III.

D. Voluntary Withdrawal or Expulsion

1. Voluntary Withdrawal from Participation. Article VI to the contrary notwithstanding any Participant may withdraw from participation by filing written notice thereof with the Executive Committee; and such withdrawal shall become effective immediately upon filing of said notice. Such Participant shall fully pay all costs and expenses due and payable from it pursuant to the terms of this Agreement and fully provide for all contingent obligations to the remaining Participants on the effective date of withdrawal. This shall include, but not be limited to, prepayment by the Participant of its proportionate share of all outstanding long term lease obligations entered into by the Participants. The withdrawal by a Participant under the provisions hereof shall not relieve such Participant of his proportionate share of any liability incurred by, or rights or claims existing against the Participants at the effective date of withdrawal. Such withdrawing Participant shall be given credit for the current value of his ownership interest as defined in Article VI.F in co-owned capital equipment, materials, and cash or other liquid assets. Said current value shall be determined on the basis of the original cost depreciated at a rate of twenty percent (20%) per annum. If Participant's credit exceeds his obligations hereunder, he shall be refunded the difference in cash upon withdrawal.

2. Expulsion from Participation. Any Participant may be expelled for failure to pay part or all of any costs and expenses properly attributable to such Participant or for failure to reimburse part or all of any expenses duly incurred

hereunder within 45 days of incurring of such obligation. Such expulsion may be imposed only by a vote of at least 75% of the remaining Participants' Representatives. Any Participant so expelled shall be given credit for the current value of his ownership interest as defined in Article VI.F in co-owned capital equipment, materials, and cash or other liquid assets. Said current value shall be determined on the basis of the original cost depreciated at a rate of twenty percent (20%) per annum. If Participants' credit exceeds his obligations hereunder, he shall be refunded the difference in cash upon withdrawal. Said Participant shall become immediately obligated for prepayment to the remaining Participants its proportionate share of all outstanding long term obligations entered into by the Participants. No expulsion shall relieve such expelled Participant from any obligation to the remaining Participants before its expulsion and shall not preclude the remaining Participants from taking any other action to effect the collection of costs and expenses properly due and owing.

E. Adjustment of Voting and Participation Upon Voluntary Withdrawal or Expulsion. The votes of the Participants and future participation as determined by Article VI shall be adjusted as of the effective date of withdrawal or expulsion of a Participant or the admission of a new Participant.

## ARTICLE III

## DELEGATION OF AUTHORITY

Every Participant shall file with the Executive Committee a duly authorized and executed instrument designating a Representative, and one or more alternates, who shall for all purposes hereof have full power and authority to represent such Participant in all matters relating to this Agreement and upon whom any other communications with respect to this Agreement may be given, delivered or served. The power and authority of such Representative shall continue until the Participant represented by him shall designate another Representative and shall notify the Executive Committee in writing of the name and address of such new Representative, or until the participation of the Participant is withdrawn or expelled in accordance with Article II.

## ARTICLE IV

## MEETINGS OF REPRESENTATIVES

A. The business and affairs of the Cooperative shall be managed by the Representatives except where specifically provided herein for a power to be exercised by another person or other persons.

B. Without limiting the general grant of power set out in Article IV.A, the Representatives may, from time to time and at any time, delegate authority hereunder to the Executive Committee, a Manager or such other person or persons as the Representatives may deem appropriate. Said delegation may be withdrawn or rescinded at any time; provided, however, that no action previously taken by such delegate shall be affected by the withdrawal or rescision. Notwithstanding any provision herein to the contrary the Representatives shall approve by vote as provided herein (and shall not delegate authority to approve) an annual budget of expenditures and any necessary supplemental budgets or authorizations for expenditures of sums exceeding the amount budgeted for each category, if any, set out in the annual budget.

C. Annual Meeting. The annual meeting of Representatives shall be held on the third Tuesday of September each year at 9:00 a.m. at the offices of the Manager, if any, or at such other time or place as the Representatives may from time to time designate.

D. Special Meetings. Special meetings of the Representatives may be called by the Chairman, the Vice Chairman, the Manager, or by any three (3) Representatives. Not less than five (5) days' written notice to all Representatives for special meetings is required. The notice shall state the purpose of the meeting.

E. Emergency Meetings. Emergency meetings of the Representatives may be called by the Chairman, the Vice Chairman, the Manager, or by any three (3) Representatives for purposes of resolving policy or financial problems in connection with any oil spill or spills by giving not less than twenty-four (24) hours' telegraphic or personal written notice.

F. Action by Consent. Any action which may be taken at a meeting of the Representatives may be taken without a meeting if approved by a writing signed by 75% of the weighted vote. Said writing shall be mailed to the Executive Committee within thirty (30) days of the date of the first signature to be effective. The Secretary-Treasurer shall promptly notify the Representatives of the action taken and shall file the writing in the Minutes of the organization.

G. Quorum. At least five (5) Representatives representing ownership of sixty-five percent (65%) of the total number of the votes must be present before business may be transacted, but a lesser number may adjourn the meeting from time to time until a quorum is obtained. Representatives present at a duly called or held meeting at which a quorum is present may continue to do business until adjournment notwithstanding the withdrawal of members leaving less than a quorum.

H. Vote. Unless otherwise specified, wherever in this Agreement any action is to be taken upon vote of the Representatives, approval or passage is to be by a majority of the votes present or a majority of the votes necessary for a quorum, whichever is greater. The number of Representatives present at a meeting shall be considered only for the purpose of determining whether there is a quorum.

The number of votes for each Representative shall be based upon the percentage participation as described in Article VI. The number of votes may change from time to time if and as the percentage participation changes.

## ARTICLE V

## EXECUTIVE COMMITTEE

A. Composition. The Executive Committee shall be composed of five (5) persons including the Chairman, the Vice Chairman, the Secretary-Treasurer and two additional members. The Manager, if any, shall attend meetings of the Executive Committee but shall not have the right to vote.

B. Election. The members of the Executive Committee shall be elected by a majority vote of the Representatives at their annual meeting. Vacancies occurring before the next annual meeting may be filled by the Representatives at a special meeting called for that purpose in accordance with the provisions of Article IV.D.

C. General Powers and Authority. The members of the Executive Committee shall have such powers and duties, individually or collectively, as expressly stated herein or as may be provided from time to time by resolution or other directive of the Representatives.

D. Meetings. The Executive Committee may act in any meeting called at any time by the Chairman or any other member of the Executive Committee. Committee action may also be taken without a convened meeting by vote or agreement, by telephone, wire or letter.

E. Voting. Each voting member of the Executive Committee shall have one vote. Action by the Committee shall require three (3) affirmative votes. If three (3) such votes cannot be obtained, the matter may be considered and acted upon by the Representatives.

F. Administrative Duties

1. Chairman and Vice Chairman. The Chairman, or in his absence, the Vice Chairman:

(a) shall preside at all meetings of the Representatives and the Executive Committee;

(b) shall sign all contracts, and other instruments in writing when authorized by the Representatives by special or general grant of authority;

(c) shall discharge all other duties that may be required of him by the Agreement or delegated to him by the Representatives.

2. Secretary-Treasurer. The Secretary-Treasurer:

(a) shall keep a record of the proceedings of all meetings (1) of the Representatives and (2) of the Executive Committee;

(b) shall countersign all documents whenever required;

(c) shall keep a record of the votes each Participant is entitled to;

(d) shall keep a current record containing the name and address of each Participant and its Representatives;

(e) shall serve all notices required by law or by this Agreement;

(f) shall keep accounts of all receipts and disbursements and deposit all moneys or other valuable effects in the name and to the credit of the Cooperative in such depository bank or banks as may be designated by the Representatives;

(g) shall present at the regular meeting of the Representatives, or whenever requried by them, accounts of all his transactions as Secretary-Treasurer and the financial condition of this joint undertaking, and discharge such additional duties as the Representatives may from time to time prescribe.

3. Manager. The Executive Committee may, within the power and authority it has hereunder, assign such duties and delegate such authority to the Manager, if any, as the Executive Committee deems necessary and appropriate. The Manager, if any, shall administer the joint activities of the Participants hereto subject to the direction of the Executive Committee.

G. Compensation. Except for the Manager, if any, no member of the Executive Committee shall be entitled to compensation. The compensation of the Manager, if any, shall be set by the Representatives.

H. Removal. The Chairman, Vice Chairman, Manager, if any, or Secretary-Treasurer may be removed at the pleasure of the Representatives, in accordance with Article IV.F., G. and H.

ARTICLE VI

OWNERSHIP OF ASSETS

FINANCES AND PARTICIPATION FORMULA

A. Advances and Budget. The Executive Committee shall, each year, prior to the annual meeting of Representatives, prepare and submit to the Representatives a budget for advances for operations for the following calendar year. Approval of the budget for the advances shall be by vote of the Representatives.

The budget for advances shall state an amount of money to be used for each of the following categories:

1. Day-to-day operations including but not limited to salaries, office expenses, and equipment and material lease and maintenance costs;

2. Investment in capital equipment and materials to be used in connection with clean-up activities.

Each Participant executing this Agreement on or before August 1, 1975 shall be deemed an original Participant and shall pay an initial advance of $25,000. Subsequent advances shall be determined in accordance with the balance of this Article VI.

Any party executing this Agreement after August 1, 1975, but prior to the first lease sale in the Area of Interest shall pay as a portion of its initial advance $25,000 plus its proportionate share, determined in accordance with B(1) below, of the current value of the original cost of all capital equipment and materials co-owned by the Participants. In addition, such party shall pay an additional sum equal to its proportionate share, determined in accordance with Paragraph B(1) hereunder, of the current value of all liquid assets co-owned by the Participants.

Within thirty (30) days following the award of leases at the first lease sale in the Area of Interest each original Participant to this Agreement who was not awarded a lease in said sale may withdraw from this Agreement and shall have refunded all advances and additional moneys paid by them to the cooperative less an amount equal to its share of the expenses incurred by the Cooperative hereunder during the period in which it was a Participant. A Participant who is admitted to the Cooperative after the effective date of this Agreement but prior to said lease sale who is not awarded a lease may also withdraw from this Agreement and shall have refunded all moneys paid by him to the cooperative, less $25,000, and less an amount equal to its share of the expenses incurred by the Cooperative hereunder during the period in which it was a Participant. The remaining Participants shall have their proportionate interests redetermined and allocated in accordance with Paragraph B(2) below.

Any party executing this Agreement subsequent to the first lease sale in the Area of Interest and the award of leases therein shall pay as a portion of its initial advance $25,000 plus one hundred fifty percent (150%) of its proportionate share of the actual cost of the capital equipment, and materials, and the current value of all liquid assets co-owned by the Participants. Such party shall also pay one hundred fifty percent (150%) of its proportionate share of the cumulative expense incurred by the Participants to the date of execution of this Agreement. Upon termination of this Agreement or withdrawal from same by such party the amount refundable shall be only that party's proportionate share of its current ownership interest, in accordance with Paragraph B below.

The preceding requirements for payment of a proportionate share of the initial advance and of the current value of all liquid assets will not be required when such entering party has purchased or otherwise acquired some portion of the assets or operating function of a Participant to this Agreement and by doing so assumes that Participant's interest. Those moneys paid in for an ownership in co-owned equipment and materials shall be refunded to the Participants in good standing in accordance with their ownership interest therein as set out in Paragraph B below.

B. Payments by Participants. Each of the Participants under this Agreement shall make payments as required to fund the budget in accordance with the following Participation Formulas:

1. Prior to Redetermination After First Lease Sale all expenditures shall be shared by each Participant on an equal basis.

2. Within ninety days (90) following the awarding of leases from the First Lease Sale the proportionate share of each Participant hereto shall be redetermined and reallocated on the basis of fifteen percent (15%) per capita and eighty-five percent (85%) acreage awarded in the first sale in the Area of Interest. Following any subsequent sale in the Area of Interest the proportionate share of each Participant shall be redetermined and reallocated on the basis of the Participation Formula then in effect.

The per capita share shall be divided equally among Participants. The acreage share shall be a Participant's fraction of leased acreage to the total leased acreage of all Participants.

Parties of Joint Interest may become Participants jointly or singly but in no instance can acreage be proportioned more than once.

3. Following the first calendar year in which twelve (12) rig months of drilling have occurred the proportionate share of each Participant hereto shall be redetermined and reallocated on the basis of ten percent (10%) per capita, ten percent (10%) acreage and eighty percent (80%) exposure risk. For the purposes of this Agreement, rig month is defined as each and every month a drilling rig or vessel is on location and working, including breakdown and maintenance time. A drill rig or vessel is considered on location at such time as the last anchor or leg is set in place at any proposed drilling site.

The basis for the per capita and acreage allocations shall be as described in subparagraph 3 above. The basis for the exposure risk shall be:

| Activity | Units | Weighting Factor |
|---|---|---|
| Offshore Production and Pipelines | Barrels of HC Produced | 1.0 |
| Marine Transport (Crude & Products) | Barrels of HC Transferred | 1.0 |
| Onshore Pipelines | Barrels of HC Transferred | 0.5 |
| Exploration and Drilling | Rig Months | . 100,000 Development |

All rates in B(3) above shall be tabulated from the preceding calendar year's operation.

For purposes of voting, each Participant shall be entitled to the same number of votes as its percentage interest rounded to the nearest 0.1% as determined by the applicable Participation Formulas.

Annually, prior to approval of the budget as described in Article VI.A, the Representatives shall determine the participation of each Participant according to the applicable Participation Formula. The initial yearly payment of each Participant will then be determined by relating the participation of each Participant to the budget.

C. Additional Requirements. Additional moneys may from time to time be added to and specified for any or all of the categories of advances referred to in Article VI.A by charge against the Participants in accordance with the applicable Participation Formula, but only on an affirmative vote of the Representatives in accordance with Article IV.F., G and H; provided, however, that any Participant who has given notice of withdrawal in accordance with Article II.D.1 shall not be required to advance additional money after date of such notice.

D. Payment of Advances. Payment of advances required to meet the cash call for the annual budget and any additional advances provided in this Article VI shall be made within thirty (30) days after call by the Secretary-Treasurer. Such call shall be for aggregate amounts not to exceed the amount determined by the Secretary-Treasurer to be sufficient to meet cash requirements for the ensuing thirty (30) days.

E. Authority to Expend Advances. The Executive Committee is authorized to expend the moneys received, subject to the condition that no moneys designated for use in any of the specified categories described in Article VI.A. may be used for the purposes described in any of the other categories specified in Article VI.A without an affirmative vote of the Representatives in accordance with Article IV.F., G and H. All expenditures within each of the specified categories shall be in accordance with the budget approved by the Representatives or in accordance with any instruction received from the Representatives.

F. Co-Ownership of Jointly Acquired Property. All capital equipment and materials or other real and personal property, tangible or intangible, acquired jointly by the Participants hereunder shall be co-owned as tenants-in-common. Each Participant's ownership interest therein shall be based upon and shall be equal to its participation under the applicable Participation Formula. Each Participant's ownership interest will accordingly be adjusted annually with the annual adjustments of the applicable Participation Formula. Such ownership interests may also be adjusted during the year with the addition of a new Participant or withdrawal or expulsion of an existing Participant.

G. Withdrawal Over Budget or Certain Expenditures. Any Participant voting against approval of the budget or against approval to make additional unbudgeted payments for acquisition or lease of capital equipment or materials or for the cost of cleaning up unidentified oil spills may withdraw, provided that such Participant exercises such right of withdrawal using the procedure described in Article II.D.1, within five (5) days after result of the vote is available to the Participant. Such resigning Participants shall be freed from any liability to the remaining Participants resulting from the aforesaid budget or additional unbudgeted payments, but shall, however, be subject to all other obligations imposed by Article II.D.1.

ARTICLE VII

CLEAN-UP POLICY

A. Oil Spills in the Area of Interest. Within the monetary limitations established from time to time and in accordance with the provisions of Article VI, it is the policy of the Participants to release co-owned and/or co-leased oil spill clean-up equipment and materials for use within the Area of Interest as follows:

1. Notice of Spill. In the event of an actual or threatened spill of liquid hydrocarbons by any Participant originating within the Area of Interest, and if such Participant desires to utilize the co-owned or co-leased equipment and materials, then such Participant shall promptly notify the Executive Committee Chairman, or if not available, any member of the Executive Committee. Such notification shall include the location and known nature and size of the spill, the required equipment and materials. Such notification may be oral, but shall be confirmed in writing as soon as practical.

2. Use by Participant. Upon receipt of the above notice, the Chairman or any member of the Executive Committee shall, without further approval of the Participants or their Representatives, release the requested equipment and material to the affected Participant. The affected Participant shall have the use of such equipment and material as may be required in containing and cleaning up such spill. During the time such equipment and material are thus committed, complete control thereof shall be in the affected Participant.

During such time the other Participants and Executive Committee shall not have any responsibility therefor, regardless of negligence. If such spill originates within the Area of Interest or, if such spill originates within such area but the containment and clean-up requires use of the equipment and material outside of the Area of Interest, the affected Participant may continue to use the equipment and material as required. The affected Participant shall return the equipment and material to as good a condition as when called into service subject to reasonable wear and tear, or at the discretion of the Executive Committee, shall pay to the Executive Committee an amount of money equal to the cost which would have been incurred in complying with such requirement. The other Participants and Executive Committee shall in no way be liable or responsible for the payment of any costs and expenses incurred by said Participant and the Participant affected by such spill shall indemnify said other Participants and the Executive Committee against all liability for such costs and expenses.

3. Multiple Use by Participants. If two or more spills affecting different Participants occur at the same time or require use of the same equipment and material in the containment or clean-up thereof and if all such spills occur in the Area of Interest, the Executive Committee shall decide in absence of agreement among the affected Participants which equipment hereunder shall be used for each spill. If, however, one such spill occurs in the Area of Interest and the other spill occurs outside the Area of Interest, the Participant affected

by the spill in the Area of Interest shall have the prior right to use such equipment and material as required, but may agree to the release of such equipment and material for use in connection with the other spill.

4. Use by Non-Participants. In the event of a request by any party who is not a Participant for the use of any equipment and material subject hereunder to contain and clean up a spill or threatened spill of liquid hydrocarbons, the Executive Committee may allow such use and determine the condition thereof, including the extent and location of such use. During the time such equipment and material are thus committed, complete control thereof and full responsibility therefor shall be in the Non-Participant subject to Article VII.A.5. During such time the Participants and Executive Committee shall not have any responsibility therefor, regardless of negligence. To compensate Participants for the cost and expenses incurred in providing and maintaining a continuing stockpile of equipment and material with expected early obsolesence and replacement and for the continuing expenses of maintaining standby services, the rate charged by the Executive Committee to a Non-Participant for the use of such equipment and material shall be an equitable rate established by the Executive Committee (subject to periodic review and change where justified), taking into consideration the continuing costs, amortization, cost of money and other pertinent factors. The Non-Participant shall be obligated to return the equipment and material to as good a condition as when called into service, or, at the discretion of the Executive Committee, shall pay to the Executive Committee an amount equal to the cost which would have been incurred in complying with such requirement. The Participants and Executive Committee shall in no way be liable or responsible for payment of any costs and expenses incurred by said Non-Participant, the Non-Participant affected by such spill shall indemnify said Participants against all liability for such costs and expenses.

5. Multiple Use by Participant and Non-Participant. In the event of concurring spills of liquid hydrocarbons by Participants and Non-Participants or unknown parties, the Participant affected shall have the prior right to use such equipment and material as are required, but may agree to the release of such equipment and material for use in connection with other spills.

6. Unidentified Spills. The Chairman or any member of the Executive Committee may, without approval of the Participants, release equipment and material for use in the clean-up of oil spills from unidentified sources within the Area of Interest only at the request and under the direction of the governmental agency having jurisdiction over the spill. Such usage shall comply with Article VII.A.4, 5 and 8 and Article XI.

7. Oil Spills Originating Outside of the Area of Interest. The Executive Committee may release equipment and material for use in the clean-up of oil spills originating outside of the Area of Interest. Such usage shall comply with Article VII.A.4, 5 and 8 and Article XI.

8. Charges for Use of Equipment and Material. Any charges provided for under this agreement to Participants or Non-Participants, other provisions hereof notwithstanding, shall be based on costs incurred, it being the intent of the Participants hereunder to provide such equipment and material on a non-profit basis.

## ARTICLE VIII

## INDEMNITY

A. Indemnity for Use. In the event of damage to, loss of, or consumption of any equipment and material subject hereunder, while committed to use by any Participant or Non-Participant in connection with any spill of liquid hydrocarbons by such Participant or Non-Participant, the affected Participant or Non-Participant shall be solely responsible and liable to the Participants for repairing or replacing such equipment and material or reimbursing the Participants for the costs thereof, and the affected Participant or Non-Participant shall indemnify all other Participants, subsequent Participants and the Executive Committee against all liability on account of such damage, loss or consumption.

B. Indemnity Agreements. Each Participant shall hold harmless and indemnify each other Participant or subsequent Participant, the Executive Committee, and the agents, servants and employees of the foregoing, against and for all liability, and costs incurred, including, but not limited to, attorneys' fees, expenses, claims, fines and damages which the affected parties suffer or sustain or become liable for by reason of any accidents, damages or injuries, either to the persons or property of the foregoing parties or to the person and/or property of any third party, including, but not limited to, federal and state governments and agencies thereof, in any matter arising out of or connected with the furnishing of equipment and materials hereunder to the indemnifying party. A like indemnity shall be obtained from a Non-Participant before such party can use the above-noted equipment and material as provided for in Article VII. The foregoing indemnity and hold harmless provisions by a Participant or Non-Participant shall be applicable whether or not the accident, damages, or injuries indemnified against were caused or contributed to in whole or in part by the negligence of the Participants, subsequent Participants, the Executive Committee or the members or subsequent members thereof, and the agents, servants, and employees of the foregoing. The party furnishing this indemnity further agrees that the parties to whom this indemnification and hold harmless provision extends shall have the right, but not the obligation, to tender the defense to the indemnifying party of any and all law suits arising out of or in any way connected with matters which are the subject of this indemnity and hold harmless provision, but that failure to tender any such law suit for defense shall in no way or wise release or relieve party furnishing this indemnity of his obligations hereunder. The party furnishing this indemnity also covenants and agrees that the indemnity and hold harmless provision granted to all the parties hereunder or subsequent parties hereunder shall not be limited, restricted or in any way affected by the amount of insurance by the party furnishing this indemnity.

## ARTICLE IX

## IMPLEMENTATION

To implement the purposes of this Agreement, and promptly after the effective date hereof, the Executive Committee shall appoint Committee(s) to evaluate the oil spill response capabilities required to contain and clean up potential oil spills which might occur within the Area of Interest. In evaluating the above the Committee(s) shall consider but not be limited to the following:

(1) entering into contracts and/or leases for the purchase or lease of appropriate oil spill capital equipment and materials; and

(2) entering into service contracts under which the contractor may (a) maintain such equipment and materials at specified locations; (b) furnish experienced operating personnel and provide training concerning use of such equipment and materials; (c) conduct sea trials of such equipment and material; and (d) furnish such other services as may be mutually agreed upon between the contractor and the Executive Committee; and

(3) providing for functions listed in IX(2) above by other means, such as response teams.

Immediately upon this Agreement becoming effective a Committee shall be appointed to develop and publish an Oil Spill Contingency Plan.

## ARTICLE X

## INDEPENDENT CLEAN-UP OPERATIONS

Nothing in this Agreement shall require or be construed as requiring any Participant to use co-owned or jointly leased materials and equipment or the services of the other Participants in connection with oil spill clean-up activities. Each Participant may, if it so desires, purchase or contract for its own clean-up equipment and materials, or engage any other person to assist it with the clean-up of oil spills, or may, as provided for in this Agreement, use co-owned or jointly leased clean-up equipment and materials and the services of the other Participants jointly with some other person or persons.

## ARTICLE XI

## INSURANCE

The Executive Committee shall secure and maintain in full force and effect, Alaska Workmen's Compensation Insurance and Employer's Liability Insurance, including coverage under the Longshoremen and Harbor Workers' Act and Outer Continental Shelf Act, and other insurance as required by the Participants. The Executive Committee shall also require any and all independent contractors performing work or services in connection with operations hereunder to provide adequate insurance coverage as required by Participants. In addition, the Executive Committee shall secure and maintain in full force and effect such other insurance as the Representatives may from time to time direct. The cost of all such insurance secured by the Executive Committee shall be deemed a normal cost of performing operations and shall be chargeable to the Participants in accordance with the Participation Formula. All insurance shall include the Alaskan Gulf Clean-Up Cooperative and the names of each Participant as a named insured. Such insurance shall contain a waiver of subrogation clause in favor of each of the Participants and Alaskan Gulf Clean-Up Cooperative.

## ARTICLE XII

## RELATIONSHIP OF THE PARTICIPANTS

It is expressly agreed that Participants hereto are engaged in a joint venture and that the relationship of the Participants is that of independent contractors and not as members of a partnership or association and that the duties, obligations and liabilities of the Participants are several and not joint or collective, and that nothing contained herein shall be construed to create or impose a partnership duty, obligation, or liability on any of the Participants. Participants shall share in accordance with the applicable Participation Formula as set forth in Article VI herein, all losses, claims, damages, judgments (and costs and expenses in connection therewith) or liabilities arising out of this Agreement.

No language in this Agreement shall in any way constitute a waiver of subrogation rights by the Participants for willful misconduct or gross negligence of the other Participants, subsequent Participants, the Executive Committee or the members or subsequent members thereof and the agents, servants and members of the foregoing.

Each Participant hereby elects to be excluded from the application of SUBCHAPTER K OF CHAPTER 1 of SUBTITLE A of the Internal Revenue Code of 1954, or such portion or portions thereof as may be permitted or authorized by the Secretary of the Treasury of the United States or his delegate insofar as such subchapter, or any portion or portions thereof, may be applicable to the Participants. If any present tax laws of any state contain provisions similar to those contained in the SUBCHAPTER of the Internal Revenue Code of 1954 above referred to under which a similar election is permitted, each Participant hereby elects to be excluded from the application of such laws. If requested by Operator, each Participant agrees to execute and join in such instruments as are necessary to make such elections effective.

## ARTICLE XIII

## MISCELLANEOUS

A. Contracts. The Representatives may authorize the Executive Committee or the Manager, if any, to enter into any contract or execute and deliver any instrument in the name of and on behalf of the Participants and such authority may be general or confined to specific instances.

B. Checks, Drafts, or Orders for Payment. All checks, drafts, or orders for the payment of money, notes or other evidences of indebtedness issued in the name of the Participants shall be signed by such Executive Committee members or in such manner as shall from time to time be determined by resolution of the Representatives. In the absence of such determination by the Representatives, such instruments shall be signed by the Secretary-Treasurer and countersigned by the Chairman, Vice Chairman or Manager.

C. Deposits. All funds shall be deposited from time to time to the credit of the Participants in such banks, trust companies or other depositories as the Representatives may select.

D. Gifts. The Executive Committee may accept on behalf of the Participants any grant, contribution, gift, bequest, or devise for the general purposes or for any special purpose of this Agreement.

E. Books and Records. The Secretary-Treasurer shall keep correct and complete books and records of accounts and shall also keep minutes of the proceedings of the Representatives and the Executive Committee and shall keep at the office of the Manager a record giving the names and addresses of the Participants, Representatives and Executive Committee. All books and records for purposes of this Agreement may be inspected by any Representatives for any proper purpose at any reasonable time.

## ARTICLE XIV

## AMENDMENTS

This Agreement may be amended only by majority vote of the Representatives. Such amendment may be made at any annual meeting or special meeting of Representatives at which time a quorum is present, provided that notice shall have been given that the amendment will be considered. This Agreement may also be amended in accordance with the procedure set forth in Article IV.F. Notwithstanding any other provision of this Agreement, the affirmative vote or written consent of seventy-five percent (75%) of the Representatives entitled to vote shall be necessary to amend Article II.D or Article VI.G, or this sentence. Notwithstanding any other provision of this Agreement, the affirmative vote or written consent of seventy-five percent (75%) of the total number of votes shall be necessary to amend Article VI of this Agreement or this sentence.

## ARTICLE XV

## TERMINATION OF AGREEMENT

A. Election by Participants. Participants may elect to terminate this Agreement by the vote of the Representatives representing seventy-five percent (75%) or more of the voting power at a meeting of the Representatives specially called for this purpose or by written consent of all Representatives without a meeting.

B. Disposition of Equipment. Upon the termination of this Agreement, the Participants shall have the first right to purchase, on a bid basis and at its onshore storage site in Alaska, the equipment purchased with funds of the Cooperative. In the event none of the Participants hereto desires to purchase said equipment, the Executive Committee or the Manager, on behalf of the Participants, shall have the right to sell same to third parties. In the event the equipment cannot be sold as above provided, it will be disposed of for its salvage value, if any. Costs for removing unsaleable equipment shall be borne equally by the Participants. Any monies received by the Executive Committee or the Manager through sale or other disposition of the equipment shall be distributed to the Participants in accordance with the applicable Participation Formula in Article VI.

## ARTICLE XVI

## SEPARABILITY

If any provision of this Agreement is found to be illegal under the laws of the United States or the State of Alaska or any subdivision thereof, the remainder of the Agreement shall not be affected.

## ARTICLE XVII

## EXECUTION

This Agreement may be executed in any number of counterparts, and each executed counterpart shall have the same force and effect as an original instrument and as if all of the parties to the aggregate counterparts had signed the same instrument. Any signature page of this Agreement may be detached by any party from any counterpart hereof without impairing the legal effect of any signatures thereon, and may be attached to another counterpart of this Agreement identical in form hereto but having attached to it one or more additional signature pages.

IN WITNESS WHEREOF, each party hereto has caused this Agreement to be executed by its duly authorized officer or attorney in fact as of the date first above written.

ATTACHMENT "F"

Oil Spill Control School

Texas A&M University System

## COURSE OBJECTIVES

The purpose of this course is to provide the participants with the information and training necessary for handling an oil spill within the capabilities of available manpower and equipment. To achieve this goal, the Oil Spill Control Course will provide participants with hands-on experience and classroom instruction so that they may work within the framework of the law while maximizing their effectiveness under all spill conditions, and minimizing expense and liability to their companies. It is the School's aim that the participants will be able to:

1. recognize potential spill situations;
2. modify existing contingency plans to make them more current and practicable;
3. establish a supervisory team to execute their contingency plan;
4. organize, train, and direct a response team;
5. recommend and direct the use of proper oil spill equipment, such as skimmers, booms, sorbents, and other tools required to mount an effective spill cleanup;
6. preplan arrangements for additional support equipment and supplies not readily available;
7. establish plans for an effective communications system during a spill, which include radio, telephone, and public address systems;
8. meet legal requirements for properly reporting oil spills;
9. handle effectively the public relations aspects and be aware of the legal implications at a spill scene.

FOR FURTHER INFORMATION, CONTACT:

Oil Spill Control School
Texas Engineering Extension Service
Texas A&M University System
College Station, Texas 77843
(713) 845-2122 or 845-7621

# OIL SPILL CONTROL SCHOOL



conducted by the
TEXAS ENGINEERING EXTENSION SERVICE

of the
TEXAS A&M UNIVERSITY SYSTEM

(48)

# KENAI PENINSULA BOROUGH

Box 850 Phone 262-4441
SOLDOTNA, ALASKA 99669

STAN THOMPSON
MAYOR

August 13, 1975

STATEMENTS OF STAN THOMPSON, KENAI BOROUGH MAYOR

AT BLM-OCS HEARINGS

Gentlemen:

I appreciate the opportunity to speak--I hope in some way my views may be helpful.

Before I speak as Boro Mayor of the Kenai Boro I have been asked by the Chamber of Commerce of the City of Kenai to read into the record a resolution they had prepared and passed--so with your permission--this is the Resolution by the Kenai Chamber of Commerce concerning the Outer Continental Shelf.

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Now, with your permission, I would like to speak as a 27 year resident of the Kenai area, as a commercial and sport fisherman, as former U.S. Commissioner 8 years, and as a Kenai ex-businessman, but particularly as Boro Mayor of the Kenai Boro.

The Kenai Boro has Alaska's only major producing gas and oil fields. It has, also, the industrial complex of refineries, fertilizer plants, and liquefacation plants that are associated with the oil/gas industry. The Kenai Boro has both offshore and onshore facilities and pipelines--In other words,

the Boro has had the complete impact that can be expected with O.C.S. development.

Historically, Kenai was a small fishing village--in 1948 when I first came to Kenai there were about 350 people that lived there--most of native -Russian heritage. The entire and only real occupation was fishing or working in a cannery--there were 1 or 2 bars and 1 general store and that was it.

During the next 10 years Kenai grew--mostly due to the opening of lands to homesteading to the construction of Wildwood Air Force Base at Kenai, and a connecting road to Anchorage. The village went to about 500 or more people.

Then in approximately 1958 came the oil impact and activity and the town grew to meet the challenge. Slightly after the oil discovery the Kenai Boro (1964) was formed--taking in all of the Kenai Peninsula and the Inlet and the area across the Inlet. The City of Kenai--and the Kenai Boro met the challenges of this impact and of the change of economic conditions without any impact funds--without any increased State or Federal aids and without crying for either. Instead they bonded to build the needed facilities--the Boro bonded for over 12-million, for example, for school construction--They built the necessary schools, etc., and are still paying for them. But the point is--they can afford to pay for them due to the increased assessed values brought on by the oil industry.

For example, the Kenai Borough's assessed value in 1965, exclusive of

oil, was $65,000,000. Today-1975-the total borough assessed value is $700,000,000--an increase of $635,000,000. Of this $700,000,000 the value exclusive of oil properties is $255,233,222.

Based on our experience, impact gifts to cities, boroughs, and least of all to the state does not seem to be necessary. The value of the impact outweighs the cost.

Now there are immediate problems in small cities and boroughs in meeting the impact--sewers, schools, etc. I would recommend an availability of low interest federal loans without the usual federal controls to be made available to the impacted area for their use, if necessary.

In possible cases where the assessed values wouldn't increase to handle the required increased costs the loans could be forgiven.

In any case--any impact funds should go directly to the impacted area and not siphoned off to the state treasury for the state's disposal to the areas that may have the most political clout.

Now in this same connection, I have heard of the tremendous need for planning for this influx of oil activity. The Kenai area's impact was, I believe, orderly and if today, with out 20-20 hindsight-we were to plan for the Kenai oil and gas impact I don't know very much we would or could do to improve on the way that economics dictated, and the way

the plants, pipelines, wells, etc. turned out. There is only a limited amount of possible advantages planning has that can be done in advance.

Kenai Borough has 3 major industries besides oil and gas--#1 fishing, #2 lumbering and #3 Tourists.

Now the fishing industry (of which I have been active in for 20 years and still am) has not really been affected pro or con by the oil industry. The fishing has had a few minor gains and a few minor losses, but they easily balance out and if in any direction--the oil industry has aided the fishing.

#2 Lumbering--has gained to some extent due to better markets and roads. However, there has been a Bore Beetle infestation in many of our spruce trees which was seemingly at least aggravated by the activities of seismographic crews.

Tourism has increased beyond our capacity to handle it at present--and I can find no reason to believe it has in any way been hurt by the oil activity.

Now--it is true that the way of life--or life style, if you would--has been changed. Some feel it's poorer and some better. It is now at a faster pace with more emphasis on salary and goods. However, now there are jobs--good jobs and careers available--and our children are returning to the Kenai from college and high school instead of having to leave to find work as before.

The Boro has been able to build new schools or build additions to most others and maintain our 41 school buildings in A#1 shape--2 with new swimming pools and 1 more pool under construction and 2 more planned--we have one of the most expensive school systems in the nation per capita student and we have done this with the lowest mill rates in the state--5 mills at present. This has been made possible through the assessed values of the oil properties--(it must also be remembered we get no income from the oil or gas production).

I would also like to note that there have been no significant air pollution or major oil spills, and few oil spills (if there were any) that have done any significant damage in all the years of platforms and oil pipelines in the area and also that the Swanson River oil field has located in it one of our most enjoyed wilderness recreation areas--the Swanson Canoe Trails Systems and they seem to be very compatible.

Most of us came here to Kenai to enjoy Alaska and the outdoor environment. We have found that we can enjoy the benefits of the oil industry and retain the enjoyment of wilderness Alaska. They are not incompatible at all.

In conclusion, I feel the Kenai Borough has definitely gained by the coming

of the oil industry--In fact the 2 biggest and most important things that have happened to improve the Kenai area as a place to live has been the opening of the land for homesteading (unfortunately long since stopped) and the entry of the oil industry.

From the viewpoint of orderly transition, I would recommend the federal government look seriously at the possibility of immediate development of lower Cook Inlet. This followed by the Gulf of Alaska, etc. The advantage being that basically all of the services and attitudes necessary are already in place in the Kenai Borough--particularly the Kenai, North Kenai area, and I could see no major disruption or problems from immediate OCS drilling in this area.

I would be pleased to answer any questions that your Committee would care to ask.

Stan Thompson

Stan Thompson, Borough Mayor

# FRIENDS OF THE EARTH

DAVID BROWER, *President*

BOX 1796, FAIRBANKS, ALASKA 99707

(907) 479-3684

JIM KOWALSKY, *Alaska Representative*


STATEMENT OF PETER SCHOLES, FRIENDS OF THE EARTH, REGARDING THE SALE BIDS FOR THE PROPOSED OUTER CONTINENTAL SHELF OIL LEASES IN THE NORTHERN GULF OF ALASKA, ANCHORAGE, ALASKA, AUGUST 13, 1975.

I am Peter Scholes, a resident of Anchorage and a member of Friends of the Earth. Jim Kowalsky, Friends of the Earth's Alaska Representative, was unable to be here today, so I am speaking in his behalf. Friends of the Earth is an international organization with many members in Alaska, and it is dedicated to the preservation, restoration, and rational use of the earth.

I appreciate the opportunity to testify here today, and I compliment the Bureau of Land Management on what I believe to be quite a good draft environmental impact state -- certainly a better effort than the programmatic impact statement released last winter.

Friends of the Earth's basic position is that the decision on whether or not to lease as presently proposed should be delayed for at least two years. There are many reasons, I believe, for delaying the decision to lease, and I will elaborate on two of them here.

First, there are a number of planning and legislative developments which are closely related to the sale of OCS leases. The most obvious being the work of Representative Murphy's Select Ad hoc Committee on the Outer Continental Shelf. This committee is considering legislation dealing with revenues, impact funds, etc., and they deserve to be allowed to complete their work in advance of a decision being made about leasing. Other examples include the

State of Alaska's efforts with the Coastal Zone Management Act which will include planning for onshore impacts. Another example is the settlement of the "d-2" provisions of the Alaska Native Claims Settlement Act. In this regard, one of the "d-2" bills now before Congress would create a Wrangells National Park including the Copper River delta, Kayak Island, Icy Bay, and some areas on beyond Yakutat. I believe it is desireable that all of these issues be settled in advance of any decisions about OCS leasing.

The description of the biological environment in the DEIS is divided among producers and consumers, coastal and marine environments, etc., and from this one doesn't get a feeling for the way in which all of of the components of the Gulf of Alaska ecosystem are closely and inextricably interrelated. I am not a biologist, but I don't think that one has to be a biologist to understand what John Muir meant in his oft repeated quote about one thing in the universe being tied to every other thing in the universe.

One example is that of shorebirds and their use of the intertidal zones of the Copper River delta (Copper River flats). According to Islieb and Kessel (1973, see reference in DEIS) in the month of May more than 20 million birds migrate through the area and utilize the 200+ miles of the Copper River flats. Many of these are shorebirds, and, in fact, according to Islieb and Kessel, a great percentage of the entire Alaska populations of western sandpipers, knots, dunlins, dowitchers, and least sandpipers utilize this area in May.

I understand that one of the ecological roles they may play is that of a recycler of nutrients in that they fertilize the flats

with their wastes, thus providing food for the growth of plankton which in turn is utlizied by other creatures higher on the food chain (fish, some invertebrates, whales, etc.). This role as a nutrient recycler is also important for seabirds.

What is the significance of the flats for shorebirds? We know that they feed intensively there and that from the delta the shorebirds fly to their breeding grounds at various points in Alaska. We also know that the condition of shorebirds as they arrive on the breeding grounds is critical for successful nesting.

So what happens if a large oil spill covers a portion of the Copper River flats during the peak of the May migration? How will this affect the condition of the birds on the breeding grounds? What happens to other components of the Gulf ecosystem if the flats are contaminated and no longer utilized by 20 million birds? Will it affect the fishing industry?

The answers to these questions are not known although some of the OCS reserach getting underway this year will help answer some of these questions. Projects getting underway in 1975 for the Gulf include: the food habits of migrant shorebirds, gull reproduction on a barrier island, surveys of wintering seabirds, and hydrocarbon signatures in the pre-OCS development environment. Because of the interrelatedness that John Muir speaks of, these individual projects have a signficance far beyond just the gulls on a barrier island, for example.

These research projects I just mentioned will likely not be complete for at least two more years. One can't simply dump several million dollars in the laps of some scientists and then a few months

later pick up the results. If this money is not to be wasted, then the decision to lease should be delayed for at least two years. I should add that on the basis of some of this research, you should be able to make decisions to lease or not to lease certain areas and predict the consequences -- to some extent -- for birds, fish, people, etc.

I would like to conclude by summarizing several specific recommendations.

1) The decision on whether or not to lease any or specific tracts should be delayed at least two years from the time the sale is now scheduled to take place.

2) The DEIS assigns each lease block a "proximity value" for oil spills and structures based on its distance from significant resource factors. I think this type of analysis could be expanded to include factors in addition to those utilized. A policy decision should be made that blocks that are assigned "relatively high hazard potential" should not be offered for sale given the present data base and circumstances.

3) Our current national energy policy seems to be little more than find all the petroleum we can and use it up as fast as possible. I believe the energy conservation measures as discussed in the DEIS (p.753), coupled with the development of non-petroleum energy alternatives, is the only long term course for the Nation to take.

Thank you for listening to these views. I hope these thoughts, along with all the others you have heard, will be thoroughly considered before the Interior Department makes any far-reaching decisions about OCS leasing.

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TESTIMONY BEFORE THE HEARING PANEL, U.S. DEPARTMENT OF THE INTERIOR

ANCHORAGE, ALASKA

August 13, 1975

I am Robert Richards, Vice President and Economist of the National Bank of Alaska.

In 1961 I received my Bachelor of Arts degree in economics from the University of Washington. In 1964 I received a Masters of Business Administration, specializing in business economics, from the Graduate School of Business, Stanford University. While at Stanford University I studied under Professor Theodore Kreps, a nationally renowned expert in the field of business-government relations. While teaching at the University of Washington I took postgraduate work and completed the Doctoral examinations in the field of "Business, Government, and Society," examining many of the same issues with which the Department of the Interior is concerned.

From June, 1964, to September, 1971, I served as an economist in private industry, then I taught economics at Whitman College and at the University of Washington, and, finally I served as a consulting economist in private practice. In September, 1971, I joined the National Bank of Alaska as economist and have held that position to this date.

am an economist interested in a balanced pursuit of our nation's economic objectives so as to be not only compatible with but indeed conducive to the achievements of our nation's social and ecological objectives, and I am a Westerner and an Alaskan with a great love for the outdoors. Therefore I can unequivocably assert that I am in accord with the full range of objectives of the Department of the Interior. .

When analyzing the Draft Environmental Statement, at least two major defects are observed:

(1.) It fails to consider the effect on the structure of Alaska's economy of expanded petroleum developement in this state;

(2.) When examining the environmental impact of the proposed oil and gas exploration, development, and production in the Gulf of Alaska, its scope is far too narrow.

First, let us take a look at the structural elements of the economic impact.

Heretofore, Alaska's major basic industries have been fishing, construction, forest products, and tourism. These industries are highly labor intensive, highly seasonal, and highly subject to cyclical fluctuations. It is because the private sector of Alaska's economy has been based on these highly volatile, relatively low-wage industries that Alaska's economy has been subject to

/ide swings, and certain areas have faced chronic poverty.

Now, however, we have the opportunity to break out of these low-wage bindings and cyclical disruptions which have plagued Alaska's economic history.

As you know better than I, the petroleum industry is extremely capital intensive. The pipeline, when in operation, will represent a capital investment of over $20 million per employee. This is compared to a pulp mill -- the most capital intensive sector of the forest products industry -- of approximately $800,000 per employee and a fishing vessel of less than $100,000 per employee. It is this difference in capital intensity and mainly this difference that explains why a roughneck on a drilling rig earns two to three times as much as a chokersetter in a logging operation in the woods.

Further, because of this extreme capital intensity and the relatively few workers associated with the petroleum industry, public revenue from this industry tends to increase to a greater degree than the need for additional public services. Indeed, an excellent additional illustration of the social benefits of the petroleum industry is the Kenai Peninsula Borough where borough government expenditures per capita are three times the level of those here in Anchorage and nearly 50% greater than the level in the Fairbanks North Star Borough.

Indeed, because the petroleum industry -- a highly capital-

be the vanguard of Alaska's future economic growth, it is my firm conviction that this economic growth will (1) create a more stable private sector and (2) not only be compatible with, but will be conducive to the achievement of the full array of our non-economic objectives: social, cultural, aesthetic, recreational, etc.

Now turning to the second defect of the Draft Environmental Statement; its narrow scope.

When endeavoring to measure the environmental and economic impact of proposed oil and gas production in the Gulf of Alaska, analyzing this project in the context of only Alaska would leave out the greatest part of the impact: the impact on the United States in general. The Department of Interior's task, of course, requires you to focus on the full range of national, social and economic benefits and social and economic costs, and the objective that we all share is to insure that the former exceed the latter.

I think it can be asserted that extraction of oil and gas from the Gulf of Alaska is not only compatible with achieving our nation's environmental objectives, but indeed is conducive to achieving our nation's environmental objectives. A number of factors lead to this conclusion.

1. If we constrain the use of coal and nuclear power because of environmental harm resulting from the development of thse two resources, then this implies an increase demand

pressure on alternative energy sources such as oil and gas.

2. It is estimated that emmission standards for automobiles imposed by the Environmental Protection Agency will increase demand for gasoline by approximately twelve per cent over the next three years.

3. Analysis of the oil seeps in the Gulf of Alaska indicates that the Gulf holds crude oil with a very low sulfur content. If this "sweet" crude in the Gulf of Alaska is not extracted, then a correspondingly greater amount of foreign crude oil must be imported. Because most of the growth in foreign supply is expected to be predominantly "sour" crude (this is, high sulfur crude) additional refineries capable of processing "sour" crude will have to be constructed in the United States, and our country will experience a greater degree of pollution resulting from refining the "sour" crude.

4. Somewhat ironically, at the very time that the Friends of the Earth, the Environmental Defense Fund, and the Wilderness Society were holding up construction of the trans-Alaska oil pipeline, I was in Los Angeles listening to environmentalists bemoaning the fact that more natural gas was not available to enable Los Angeles County to fully implement a program of fuelling county vehicles with natural gas so as to reduce air pollution.

'rankly, in my opinion, in the past there has been a tendency to analyze these projects in too narrow a sense. Ironically, rejecting certain projects on the basis of focusing on the specific environmental costs of the individual project could very will lead to not minimizing the total environmental costs to the nation as a whole. We economists refer to this as sub-optimization. It results from taking too narrow a viewpoint in our analyses of specific projects. Indeed, we are meeting ourselves full circle on this issue, and I would like to re-emphasize that, if we do not develop the oil and gas in the Gulf of Alaska because environmental costs are viewed as too great we must at least acknowledge that we are at the same time increasing environmental costs elsewhere in our country.

To summarize my testimony: I have endeavored to point out to the Hearing Panel that the Draft Environmental Statement (1.) fails to adequately consider the important positive effect on the structure of Alaska's economy from expansion of the petroleum industry in our state and (2.) does not sufficienty indentify or attempt to measure the environmental cost to the rest of the nation of not allowing oil and gas development in the Gulf of Alaska.

Thank you very much. I appreciate your taking time and considering my testimony.

Robert R. Richards

Vice President and Economist

(52)

CHUGACH NATIVES, INC.
TESTIMONY ON OCS LEASE SALE
ANCHORAGE 8-13-75

MY NAME IS RICHARD JANSON, EXECUTIVE DIRECTOR FOR CHUGACH NATIVES, INC.

WE REQUEST A DELAY IN THE LEASE SALE IN THE GULF OF ALASKA; WE FEEL THAT THE STUDY ON THE IMPACT ON SHORE IS NOT ADEQUATE.

CONTINUED AND MORE EXTENSIVE STUDIES OF THE OCEAN CURRENTS IN THE PROPOSED LEASE AREA SHOULD BE DONE SO THAT ON SHORE DRIFT CAN BE DETERMINED THEREBY FIXING THE AREA THAT COULD CAUSE THE MOST DAMAGE ON SHORE, AND WE PROPOSE THESE AREAS NOT BE PUT UP FOR SALE.

THE STUDY ASSUMES THAT THE PLATFORMS WILL BE BUILT OUT OF STEEL AND OUTSIDE OF ALASKA. THIS THEN WOULD HAVE LITTLE IMPACT ON ALASKA BUT THE NORTH SEA DETERMINED THAT CEMENT PLATFORMS WERE THE BEST. THEY MUST BE BUILT CLOSE TO THE LOCATION AND TAKES MANY ACRES OF FLATLAND AND LOTS OF AGGREGATE. IF THIS BECOMES THE CASE IN ALASKA, THIS WOULD HAVE A BIG IMPACT ON SHORE. THE STUDY SHOULD CONTEMPLATE THIS POSSIBILITY AND ADDRESS IT AS SUCH.

WE FEEL THAT THIS DEVELOPMENT WILL HAVE A DEFINITE IMPACT ON OUR LANDS, OUR CITIES AND VILLAGES THAT ARE ADJACENT TO THE PROPOSED DEVELOPMENT. WE NEED TIME TO PREPARE FOR THIS IMPACT.

WE FEEL THAT THESE ARE JUST A FEW OF THE REASONS FOR DELAY, THEREFORE, IT IS OUR FEELING THAT A DELAY IS NECESSARY.

Testimony of: Frank A. Tupper

Representing: Kachemak Bay Defense Fund

Submitted to: U.S. Dept. of Interior

O.C.S. Public Hearing on Northern Gulf of Alaska

Date: August 13, 1975

Anchorage, Alaska

Judge Mesch, and distinguished members of the Hearing Panel;

The tragic events leading to the leasing and sale of Alaskan land for oil & gas exploration in Kachemak Bay have a direct corolation to the proposed leasing of the Interior Department for the Gulf of Alaska.

Kachemak Bay is like no other body of water in the world. It is a gross understatement to claim that it is unique. Kachemak Bay is not typical in any sense of the word.

Unfortunately, the problem that the Bay faces is sadly typical. It is a Bay in crisis, brought about by crisis, with the net result of long term crisis.

Kachemak Bay lies at the southerly end of the Kenai Peninsula, adjacent to Cook Inlet, stretching 23 miles in length, and 3 miles in width. It is pure. It is clear. It is abundant in marine life. It is a tourist mecca. It is steeped in historical and archeological values. It is beautiful, and it is home. But most important - IT IS THREATENED.

In Dec. 1973, Kachemak Bay for all its worth and wealth, was sold out for a mere $25 million at an oil lease sale, conducted by the State of Alaska, upon the request of the major oil industries.

The sale and the events that have followed, distinguished members of the Hearing Panel, are but a microcosim of O.C.S. and should be an impressionable lesson of historic significance for you to recoginize and to avoid. Representation, protection, participation, candor conservation, and wisdom are the hallmarks of a truly democratic goverment and society. They do not always spell progress on the tally boards of Wall Street. Nor should they if necessary. But your assignment must be one of exercising logic, clear judgments and rational thought process, not a blind allegiance to some damn fool slogan of "operation independence" initiated by our gluttony of consumptive indigestion causing the malady of "energy crisis".

Kachemak Bay, not unlike the Gulf of Alaska, is abundant with renewable & non- renewable resources; hazzardous weather conditions, and geologically dangerous strata.

The residents of Homer and Seldovia, upon learning of the oil leases chose a course that would lead to a remedy. We requested that our state move cautiously and protect the area, the economy, the lifestyle and the resources. Our politicans had mired in the prospects of "black gold" far too long. The former Governor, the Commissioner of Natural Resources and

unquestioning staff, were so arrogant as not to even post notice of the sale in our area, nor was there even an economic and environmental finding conducted to see if the sale was in the best interest, and the final insult hurled from the lofty peaks of Juneau and Anchorage was the denial of a requested public hearing on the land to be leased prior to the sale.

Democracy and representation had been perverted and the peoples land would be leased without their knowledge or consent.

This issue is presently lying on the doorstep of the Alaskan Supreme Court, whose ultimate wisdom and justice we seek. The public sector was unable to obtain the protection of their land and existing resources without the recourse of having to initiate litigation. The public was unable to get a badly needed moratorium on drilling for the purpose of conducting necessary scientific studies of the Bay and the communities to be effected without the need of going to court. The public was unable to protect and espouse their Constitutional rights without entering into litigation. Why must these studies be conducted "post facto" and in an expeditious manner?

We were advised by our political leaders and educators to take an active part in the political and administrative process of government. We did. Four hearings were held, but to what avail? When the die is cast, be it in Juneau, Washington, or Houston, the public has little chance of having any meaningful impact on the planning process, save for accepting the fate, selling out and moving on, or plant your feet on the facts and moral convictions, and fight. In Homer, we have chosen the latter, and we will prevail no matter what the odds. However, it does seem a shame tha in our historically evolved society, that this is the needed course of action that seems to be the most effective.

The action taken by the State was wrong, dead wrong, and it will eventually be corrected for Kachemak Bay and its' rich crab and shrimp sanctuaries must be protected from the high and proven risks that oil exploration and development will spawn.

Other Alaskan communities, faced with similiar destructive environmental, social, cultural and economic impacts, can and must do the same to protect their rights, their values, and their interests.

In other areas of our State, the threat posed by O.C.S. development, merits the

communities do not sink into the abyss of the industries lust and bullish destructive tactics.

Time and again small towns and villages who quietly lie in the Alaskan fallow fields of abundant resources or choice land for industrial development, await with a sense of impending doom, the sentence to be handed down, or forced down, in the burmaucratic fashion that we have witnessed and tolerated for far too long. The situation must be reversed.

When government fails to be responsive and responsible to the needs, protection and dissemination of information to such communities and their people, moral discipline gives way to myopic vision; citizens have no other recourse and alternative than to vigorously oppose such injust actions.

Such acts of arrogance and the betrayal of citizens rights and public trust were performed on Kachemak Bay. Some of those persons who were charged, through the electoral and appointive process of protecting the rights and land of the people, and who in turn, acquiesced in their line of duty, are here before you testifing today. Such a mockery. Such a farce.

I would take this opportunity today to call upon those Alaskan Coastal communities, who are being adversely affected by any unplanned, covert rush to develop, exploit and sacrific the land and community of man and nature, to join forces and collective talents in forming an Alaskan Alliance of Coastal communities to protect the land they love and respect, and have come to view as a community, not a commodity. O.C.S. is but one of the challanges that stand on the threshold, there will be others for decades to come. But collectively, we can insure that orderly, wise and rational development through planning stemming from the people on down, rather than the other way around, will be a goal that will serve the best interests of us all.

Many Alaskans have come to develop a deeply ingrained distrust and distain for governmental agencies, bureaus and their respective lip service through the existing excersise of public hearings. For the simple reason that no one really listens, and no one really has security based on devotion to the principle of rational thinking, to act on behalf of the people.

A legacy of lies, half truths and selfish motivations on behalf of a few at the expense of many, have with great reason, caused many Alaskans to fear the combined powers of

large extractive industries, compromising small town business men, mayors and elected officials and lawyers who are emersed in the mire of the frontier exploitive ethic.

Prior to Statehood, the Federal government was charged with protecting wilderness and our bountiful natural resources. Since we have joined the Union, we have also joined the inane rush to ruination and a loss of the serenity, sparce population and scenic wonderment we use to believe was the "last frontier".

The Dept of Agriculture has, through a lax permit granting and basically unregulated conservation controls, allowed Southeastern and now Southcentral, to be cleared to the waters edge of timber.

More recently, the Dept. of Interior has sanctioned an oil pipeline bisecting and usurping all that IS Alaska, impacting both man and nature at every conceivable level, with a promise of more to come, namely D.C.S.

We, (Alaska, her people ,resources and beauty) stand in the maw of Washington, expected to be rapidly devoured by the omniverous jaws of a carcenogenic society, whose government underwrites the sanctions and justifications for such "crimes" against our beloved state.

Profit seeking industries do not invest themselves in seeking a halt to such consumption. Esthetics, lifestyle, serenity, and remoteness are something to be conquered. They will be smothered by the blanket of profit priorities.

The Federal government and large coporate industries, spend millions of dollars trying to build and buy the publics' trust under the hearlded banners of patriotism, operation independence, free enterprise and the common good, Slogans such as; "progress is our most important product"; "we're working to keep your trust"; and "we want you to know", are but salves to the innocent and insults to the informed.

We have built and created the box-like trap to which we now refer to as "the energy crisis". Not unlike the dreaded disease of cancer, we are the consumming cells devouring energ supplying resources in a maniacal frenzy, with no real efforts to conserve. It would appear that our appetite can not be satiated.

In Alaska, our cities, small towns, uninhabited areas, scenic splendor and lifestyle of a simplistic yet rugged and sometimes spartan design, are now being called upon to

ould we be obligated to be another sacrificial lamb on the alter of the Interior Dept. expeditied O.C.S. lease schedule?

We can fully realize that every technological advantage has a comparible cost, that can be reflected by a given dependency. Yet we ignore the debt we owe to the land for the costly effects of what little we really gain.

Perhaps in a futile attempt to appeal to your postponing the lease sale in the Gulf and then Cook Inlet, I would strongly condem the fact that in the more than 1300 page E.I.S. you devote but a meger 30 pages to onshore impact, land use, socio-economic effects, and no mention of construction, and service bases on shore that will be of significant impact. Also, I failed to see any reference to the cumulative effects on the environment of the Gulf and their long range implications.

Not unlike Kachemak Bay, you are trying to play "catch-up ball" with rushed scientific baseline studies on a vast area where so little is known and time is the only factor. But that is not in the best interest of "Operation Independence" now is it?

Perhaps it is long overdue, but I remain optomistic that it will be forth-coming when the government and the oil industry develop resources and meet the plans and desires of the citizens on their local level and not expect in the existing arrogant and perverted fashion of having the public rise to the wishes of the industry and government.

It is high time for Alaska to tap its human resources, and develop an inventory of petroleum resources, where they lie, and what causal effects there might be in exploring and developing these resources upon the land and the people, and then telling the industry on what conditions and where they may commence operations.

In closing, perhaps it is a most profound observation when one reflects that the battle to save Kachemak Bay comes at a time when we as a nation pay homage to the spirit of revolution against an oppressive government that took away our human rights in 1776. What arted in Bostons' harbor, is alive and well in Kachemak's Bay.

Thank you for your time, and allowing me the opportunity to testify.

Frank H. Kapper

(55)

STATEMENT OF DUANE R. BARTELS
AREA LANDMAN, EXPLORATION-OFFSHORE AREA
CONTINENTAL OIL COMPANY
HOUSTON, TEXAS

AT THE BUREAU OF LAND MANAGEMENT HEARINGS
ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR OUTER CONTINENTAL SHELF LEASING
IN THE NORTHERN GULF OF ALASKA

ANCHORAGE, ALASKA - AUGUST 12-13, 1975

My name is Duane R. Bartels. I am Area Landman for the Exploration-Offshore department of Continental Oil Company, Houston, Texas. I supervise the acquisition and administration of oil and gas leases acquired in all of the frontier areas of the O.C.S. of the United States and on all lands in the State of Alaska. From 1968 thru July 1973 I had the pleasure and enjoyment of living in Anchorage while working for Continental Oil Company. During that time I became familiar with the many cultures and the rich environment of this great state. Being aware of the industry's interest and ability to protect the environment, I am convinced the O.C.S. of the Northern Gulf of Alaska should be developed if industry finds commercial quantities of oil and gas. Continental Oil Company is a member of the Gulf of Alaska Operator's Committee and the Alaska Oil and Gas Association and wholly subscribes and supports the testimony presented by ~~those two organizations~~ the G.O.A.O. Committee. In addition I have the following comments in behalf of Continental Oil Company, all in support of holding the lease sale in the area covered by your Draft Environmental Impact Statement.

First, you and your staff are to be commended for the comprehensive preparation of the Draft Environmental Impact Statement covering the proposed oil and gas leasing in the Northern Gulf of Alaska. It appears that few "stones" were left unturned with respect to your accumulation of data. For example, the statement recognizes the possibility of an oil

SPILL. WE IN THE INDUSTRY ALSO RECOGNIZE THIS POSSIBILITY ALTHOUGH WE BELIEVE IT TO BE HIGHLY UNLIKELY.

IN ANY EVENT YOU MAY BE ASSURED THAT THE INDUSTRY WILL TAKE WHATEVER STEPS THE LATEST TECHNOLOGY HAS DEVELOPED TO PREVENT SUCH A SPILL; BUT, SHOULD A SPILL OCCUR, THE INDUSTRY WILL USE THE LATEST TECHNIQUES AND EQUIPMENT AVAILABLE TO MINIMIZE ANY ADVERSE IMPACT.

A CONSIDERABLE PORTION OF YOUR DRAFT IS VERY POSITIVE AS TO THE ADVERSE IMPACT SHOULD AN OIL SPILL TAKE PLACE. WE BELIEVE THAT THE FINAL ENVIRONMENTAL IMPACT STATEMENT SHOULD GIVE GREATER EMPHASIS TO THE REDUCTION OF SUCH IMPACT BY WIND AND WAVE ACTION, PARTICULARLY IN THE GULF OF ALASKA, AND BY THE USE OF OIL SPILL AND CONTAINMENT EQUIPMENT BY THE INDUSTRY.

WE ALL NEED TO STRIVE FOR CLEAR AND COMPLETE STATEMENTS TO PREVENT THE PUBLIC FROM BECOMING MISLED, CONFUSED AND THEREFORE RELUCTANT TO COMMIT TO A POSITIVE PROGRAM FOR THE DEVELOPMENT OF AN ADEQUATE ENERGY SUPPLY.

IT IS UNFORTUNATE THAT THE WORD "IMPACT" IS USUALLY IDENTIFIED WITH NEGATIVE EFFECTS. LITTLE IS SAID ABOUT THE POSITIVE SIDE OF AN IMPACT, PARTICULARLY THAT WHICH TAKES PLACE EVERYDAY, UNNOTICED, AND THEREFORE IS REALLY NOT FULLY APPRECIATED UNTIL IT IS DISRUPTED OR NO LONGER AVAILABLE. WITH THIS THOUGHT IN MIND, IT SHOULD BE RECOGNIZED THAT A CONSIDERABLE PORTION OF THE ESSENTIAL DAILY NEEDS OF THE PEOPLE LIVING IN ALASKA DEPENDS UPON

GOODS AND SERVICES BEING PRODUCED IN AND SUPPLIED FROM THE "LOWER 48". ACCORDINGLY, ANY ENHANCEMENT THAT MAY BE OBTAINED IN OUR NATION'S ENERGY SUPPLY, THRU DEVELOPMENT OF WHATEVER COMMERCIAL DEPOSITS OF OIL AND GAS THAT MAY BE FOUND ON THE OUTER CONTINENTAL SHELF OF ALASKA OR FROM ANY OTHER FRONTIER AREAS OF THE UNITED STATES, WILL CERTAINLY PROVIDE A POSITIVE IMPACT TO THE OVERALL ECONOMY OF THE STATE OF ALASKA AND THE NATION.

THUS THERE IS MORE TO THE IMPACT FROM THE ANTICIPATED DEVELOPMENT THAN STATE VS. NATIONAL OR NATIONAL VS. STATE AND; THEREFORE, CONSIDERATION SHOULD BE GIVEN TO THE TOTAL IMPACT--NOT JUST TO ADVERSE EFFECTS TO ALASKA OR JUST TO THE PROPITIOUS EFFECTS TO THE "LOWER 48". WE ARE ALL IN IT TOGETHER--SO GOES ENERGY--SO GOES THE STATE AND SO GOES OUR NATION.

AS HAS BEEN SAID TIME AND TIME AGAIN, ONLY EXPLORATORY DRILLING WILL ANSWER THE QUESTION AS TO WHETHER OR NOT THERE IS OIL AND GAS IN THE AREA. SHOULD OIL AND GAS BE FOUND, THEN ONLY ADDITIONAL DEVELOPMENT DRILLING WILL PROVIDE A BASIS FROM WHICH TO PROJECT WHETHER OR NOT THERE ARE ADEQUATE RESERVES TO JUSTIFY ESTABLISHMENT OF PRODUCING FACILITIES. ONLY AFTER PRODUCTION FACILITIES ARE INSTALLED, FOLLOWED BY ADDITIONAL DRILLING AND PRODUCTION WILL YOU BE ABLE TO PROJECT THE PERIMETERS AND QUALITY OF THE RESERVOIR, FROM WHICH AN ACCURATE ESTIMATE MAY THEN BE MADE AS TO THE AMOUNT OF RECOVERABLE RESERVES; HOWEVER, THE EXACT AMOUNT OF RECOVERY WILL NOT BE KNOWN UNTIL THE

RESERVOIR IS NO LONGER CAPABLE OF ECONOMIC PRODUCTION.

CURRENT INDUSTRY INTEREST VERY WELL REFLECTS THE HIGH POTENTIAL FOR ECONOMIC PRODUCTION FROM THE GULF OF ALASKA; HOWEVER, SHOULD THE RESULTS OF THE EXPLORATORY DRILLING BE NEGATIVE AND NOT WARRANT THE ESTABLISHMENT OF PRODUCING FACILITIES, THE STATE OF ALASKA, THE "LOWER 48" AND OUR NATION NEED TO BE MADE AWARE OF THIS, AS SOON AS POSSIBLE, IN ORDER TO APPROPRIATELY MODIFY SUBSEQUENT PROGRAMS LEADING TO BECOMING A SELF-SUFFICIENT ENERGY NATION.

EXTREMELY IMPORANT THAT WE KNOW SOON IF THE FRONTIER AREAS, WHICH HAVE NOT BEEN EXPLORED, WILL CONTRIBUTE TO OUR SUPPLY OR WILL BE BARREN. WE WILL NEVER KNOW HOW COSTLY DELAYS, CAUSED BY LAW SUITS, OVER-REACTION, STRICT INTERPRETATION OF LAWS, (EVEN THOUGH WELL INTENDED) AND ORDINARY OBSTRUCTIONS HAVE HINDERED THE DEVELOPMENT OF OUR NATION'S ENERGY SUPPLY, AND DIRECTLY OR INDIRECTLY HAVE INCREASED COSTS OF CRUDE PETROLEUM. SUFFICE IT TO SAY THAT WE HAVE PAID A DEAR PRICE TO BECOME ENVIRONMENTALLY AWARE.

IN THE EARLY HEARINGS HELD FOR SALES IN THE GULF OF MEXICO WE HEARD OPPOSITION PREDICT DIRE CONSEQUENCES FOR CONTINUED SALE OF LEASES IN THAT AREA. FORTUNATELY, THESE PREDICTIONS HAVE NOT MATERIALIZED AND AT THE RECENT HEARINGS, OPPOSITION HAS PRACTICALLY DISAPPEARED. HEARINGS FOR FRONTIER AREAS SUCH AS THE GULF OF ALASKA ARE A MUST AND CAN BE VERY BENEFICIAL, BUT SUCH HEARINGS SHOULD NOT BE USED AS A VEHICLE TO PROMOTE FURTHER NEEDLESS DELAY FOR DELAY'S SAKE. THE STATE OF ALASKA CAN BECOME THE NATION'S LEADING OIL PRODUCING STATE WITH THE POTENTIAL OF BECOMING ONE OF THE LEADING OIL PRODUCING AREAS OF THE WORLD. THE BENEFITS TO THE PEOPLE OF THE U..ITED STATES CAN BE ENORMOUS AND ALL THIS CAN BE

ALASKA FOR THE PAST 8 YEARS. I AM HERE TODAY REPRESENTING THE AMERICAN ASSOCIATION OF PETROLEUM LANDMEN AS A MEMBER OF OUR ORGANIZATION'S BOARD OF DIRECTORS.

THE AAPL IS AN ORGANIZATION OF OVER 5000 PROFESSIONAL LANDMEN FROM BOTH THE CORPORATE AND INDEPENDENT SECTORS OF THE PETROLEUM AND MINING INDUSTRIES IN THE UNITED STATES AND CANADA. OUR EXECUTIVE OFFICES ARE LOCATED IN FORT WORTH, TEXAS, BUT MANY OF OUR MEMBERS RESIDE IN THIS AREA AND COUNTLESS OTHERS ARE ENGAGED IN PETROLEUM RELATED ACTIVITIES OFFSHORE AND ONSHORE ALASKA. OUR ORGANIZATION STRONGLY SUPPORTS THE SCHEDULING OF SALE #39 AT THE EARLIEST POSSIBLE DATE.

AAPL HAS HAD REPRESENTATIVES APPEAR IN PERSON OR HAS SUBMITTED WRITTEN STATEMENTS FOR THE RECORD AT EACH PUBLIC HEARING HELD BY INTERIOR FOR OCS SALES BEGINNING WITH YOUR FIRST HEARING IN JULY 1970 AT NEW ORLEANS. WE ALSO HAVE COMMENTED ON "PROPOSED RULE MAKINGS: WHERE THE INTERESTS OF OUR MEMBERSHIP HAVE BEEN INVOLVED. THESE HEARINGS FOR OCS SALES HAVE SERVED TO HIGHLIGHT OUR NATION'S ENERGY SHORTAGE, FURTHERED UNDERSTANDING OF THE PROBLEMS OF THE OFFSHORE PETROLEUM INDUSTRY BOTH IN THE PUBLIC AND PRIVATE SECTORS, AND HAVE PROMOTED ENVIRONMENTAL AWARE-NESS ON THE PART OF EVERYONE. AT THE SAME TIME, THEY HAVE CAUSED COSTLY

(57)

AUGUST 12, 1975

MANAGER
ALASKA OUTER CONTINENTAL SHELF OFFICE
BUREAU OF LAND MANAGEMENT
ANCHORAGE, ALASKA

DEAR SIR:

MY COMMENTS WILL BE BRIEF IN THE INTEREST OF THOSE WHO HAVE SAT THROUGH THIS LENGTHY HEARING.

OUR FIRM PRESENTLY HAS AN ALASKAN PAYROLL OF IN EXCESS OF 60 PERSONS. WE WERE THE LARGEST ENGINEERING FIRM IN ALASKA PRIOR TO THE ALASKA PIPELINE. BECAUSE WE ARE NOT WORKING UNDER ANY OIL INDUSTRY CONTRACT PRESENTLY WE HAVE BEEN SURPASSED IN SIZE BY SEVERAL OTHER ENGINEERING FIRMS HOLDING SUBSTANTIAL OIL INDUSTRY CONTRACTS.

FIRST, I WOULD LIKE TO ENTER INTO THE RECORD PAPERS WRITTEN BY TWO WELL-KNOWN ENGINEERS. I HAVE NO BUSINESS RELATIONSHIP WITH EITHER ENGINEER BUT I AM CERTAIN THAT EACH ENGINEER SPEAKS WITH A CONSIDERABLE BACKGROUND OF KNOWLEDGE ON THE SUBJECTS OF ENERGY AND OUR ENVIRONMENTAL REGULATIONS. THE FIRST ARTICLE IS A TRANSCRIPT OF A TALK BY DAVID R. WILLIAMS, JR., PUBLISHED IN THE CLEVELAND "PLAIN DEALER". THE SECOND

IS AN ARTICLE PUBLISHED BY STAN KAPPE WHO IS PRESIDENT OF OUR AMERCIAN ACADEMY OF ENVIRONMENTAL ENGINEERS, OF WHICH I AM A MEMBER.

THE THIRD ARTICLE PUBLISHED IN LAST SUNDAY'S ANCHORAGE TIMES WAS WRITTEN BY FORMER SPEAKER OF THE ALASKA HOUSE OF REPRESENTATIVES, TOM FINK. THESE THREE ARTICLES SPEAK ALMOST AS ONE VOICE ABOUT THE ENERGY CRISIS NOW BEFORE US AND THE NEED TO BRING SOME COMMON SENSE INTO THE PROCESS OF ENVIRONMENTAL MANAGEMENT AND CONTROLS. MR. FINK RAISES THE POINT THAT IF ALL PROJECTS THAT CREATE ECONOMIC BENEFIT MUST PREPARE ENVIRONMENTAL IMPACT STATEMENTS OUTLINING THE VARIOUS TRADE-OFFS OF ENVIRONMENTAL AND SOCIAL FACTORS RELATIVE TO THE PROPOSED PROJECT, IS IT NOT ONLY FAIR THAT THOSE ORGANIZATIONS THAT OPPOSE PROJECTS ON AN ENVIRONMENTAL BASIS SUBMIT STATEMENTS, IN GREAT DETAIL, SETTING FORTH THE POSSIBLE ECONOMIC AND SOCIAL EFFECTS (BOTH NEGATIVE AND POSITIVE) OF THEIR PROPOSED ENVIRONMENTAL CONTROLS.

THIS LEADS TO ANOTHER POINT THAT I WOULD LIKE TO MAKE THAT RELATES TO THE VERY BASIS OF BUSINESS AND GOVERNMENT SUCCESSES AND FAILURES. I SUBMIT THAT IN THE PAST GENERATION WE HAVE PASSED FROM A RELATIONSHIP OF TRUST AND GOOD FAITH TO A SYSTEM THAT IS BASED TO A GREATER EXTENT UPON DISTRUST AND LACK OF FAITH IN OUR BUSINESS AND GOVERNMENT COMMUNITIES.

THIS SEEMS TO BE A PROGRESSIVE PROCESS IN BOTH THE BUSINESS AND GOVERNMENT SECTORS. THE MENAGERIE OF FEDERAL GOVERNMENT RULES, REGULATIONS, ETC., THAT ARE SELDOM, IF EVER, EVEN PARTIALLY UNDERSTOOD, LET ALONE ENFORCED, MOST CERTAINLY CREATES A GREATER BURDEN UPON THE HONEST CITIZEN AND BUSINESSMAN WHO IS TRYING TO OBEY THESE LAWS AND REGULATIONS AND WHO HAS TO PAY THE SALARIES OF THOSE PAID TO ADMINISTER THESE REGULATIONS THAN IS THE BURDEN UPON THE DISHONEST BUSINESSMAN WHO IGNORES ALL THESE RULES AND RISKS GETTING CAUGHT WITH THE PROBABLE RESULT THAT HE WILL RECEIVE ONLY A LIGHT TAP ON THE WRIST.

WOULD IT NOT BE MUCH BETTER IF WE HAD FEWER LAWS, RULES AND REGULATIONS AND "CAME DOWN HARD" ON THOSE WHO DISREGARDED THESE SIMPLER RULES? UNTIL 30 YEARS AGO AN ENGINEER WAS USUALLY GIVEN A BUDGET AND A PURCHASE ORDER BOOK AND TOLD TO "BUILD IT". THE TASK WAS ALMOST ALWAYS SUCCESSFULLY ACCOMPLISHED WITHOUT THE BENEFIT OF AN "ENVIRONMENTAL IMPACT STATEMENT" AND THE OTHER MULTITUDE OF REQUIREMENTS.

I SUBMIT THAT THE ALCAN HIGHWAY WOULD NEVER HAVE EXTENDED BEYOND EDMONTON WERE THE SAME RULES, REGULATIONS, ETC., IN FORCE THAT ARE IN EFFECT TODAY. THIS WOULD NO DOUBT ALSO BE TRUE OF THE OLD RICHARDSON TRAIL (NOW THE RICHARDSON HIGHWAY) AS WELL AS OTHER HIGHWAYS IN ALASKA.

WHAT WAS THEN CONSIDERED TO BE A NATIONAL NECESSITY WOULD TODAY BE CONSIDERED AN "ENVIRONMENTAL DISASTER". TODAY THE SCARS IMPOSED UPON MOTHER NATURE BY THAT HIGHWAY HAVE ALMOST ALL HEALED AND TRAVELING THAT HIGHWAY TODAY DOES NOT PRESENT A VIEW THAT REFLECTS AN "ENVIRONMENTAL DISASTER".

ABOUT 30 YEARS AGO OUR AMERCIAN SOCIETY OF CIVIL ENGINEERS BOASTED THAT NONE OF OUR MEMBERS HAD EVER RECEIVED A CRIMINAL SENTENCE. THIS MAY NOT BE TRUE TODAY BUT I BELIEVE THAT THE ENGINEERING PROFESSION STILL RANKS EXTREMELY WELL IN THAT CATEGORY. (AT LEAST COMPARED TO ANOTHER PROFESSION THAT IS WRITING MANY OF THE LAWS, RULES AND REGULATIONS). WOULD IT NOT MAKE MORE SENSE AS A STATEMENT OF NATIONAL POLICY IF WE WERE MORE TRUSTFUL OF THOSE WHO ARE TRYING TO ACCOMPLISH A BENEFICIAL TASK?

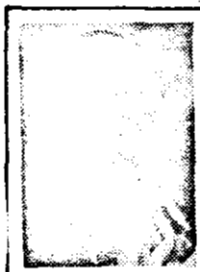
MY FINAL POINT IS THAT YOU HAVE NO DOUBT HEARD MUCH FROM THOSE WHO BELIEVE THAT PRISTINE ALASKA WILL BE DEVASTATED BY THE "GREEDY OIL INTERESTS" FROM THE "LOWER 48". I SUBMIT THAT NEARLY EVERY ALASKAN COMMUNITY HAS RECEIVED MANY BENEFITS FROM PUBLIC WORKS TO THE EXTENT THAT THESE COMMUNITIES PRESENTLY ENJOY SCHOOLS, AIRPORTS, HARBORS, DOCKS, WATER AND SEWER SYSTEMS, STREETS, HIGHWAYS, COMMUNITY HOSPITALS, PUBLIC BUILDINGS, MORTGAGE MONEY FOR HOUSING AND MANY OTHER

FACILITIES, THAT HAVE BEEN SUPPLIED LARGELY THROUGH TAXATION AND FINANCIAL SUPPORT FROM THE "GREEDY OIL INDUSTRY" AND OTHER "SOUTH 48" TAXPAYERS. ANCHORAGE CERTAINLY WOULD NOT BE THE CITY IT IS TODAY (AND I BELIEVE IT IS A GREAT CITY TO LIVE AND WORK IN) WITHOUT THE NEARLY A HALF BILLION DOLLARS IN FEDERAL DISASTER FUNDS FOLLOWING THE 1964 EARTHQUAKE. NO DOUBT ALASKA WILL TAKE A FEW LUMPS FROM ENVIRONMENTAL IMPACTS FROM GULF OIL ACTIVITIES IF A PROVEN FIELD IS DEVELOPED. PERHAPS WE WILL HAVE TO GET A DICTIONARY OF TEXAS LINGO IN ORDER TO COMMUNICATE WITH NEWCOMERS TO ALASKA. OUR OWN FIRM HAS RECEIVED LITTLE DIRECT BENEFIT FROM THE OIL INDUSTRY IN ALASKA, AND, IN FACT, PRESENTLY HAVE NO CONTRACTS WITH THE OIL INDUSTRY. NEVERTHELESS, I BELIEVE THAT THE OFFSHORE LEASES PRESENT AN OPPORTUNITY FOR ALASKANS TO AT LEAST PARTIALLY REPAY OUR "SOUTH 48" NEIGHBORS WHO HAVE SUPPORTED MOST OF THE COMMUNITY FACILITY DEVELOPMENTS THAT ARE IN EVIDENCE TODAY.

ONE OF THE MOST IMMEDIATE PROBLEMS THAT I SEE IN ALASKA IS THAT OF DEFINING THE ROLE THAT OUR FEDERAL, STATE AND LOCAL GOVERNMENTS SHOULD PLAY. MOST PERSONS IN ALASKA WOULD AGREE THAT THE ROLE THAT OUR POLITICAL SYSTEM SHOULD PLAY IS THAT OF HELPING OUR CITIZENS TO HELP THEMSELVES AND NOT THE ROLE OF ATTEMPTING TO "DO EVERYTHING FOR EVERYBODY". IF OUR

POLITICAL SYSTEMS WILL PROVIDE GUIDANCE AND DIRECTION WITHOUT USURPING THE ROLE OF PRIVATE ENTERPRISE AND THEREBY ALLOW OUR RESIDENTS TO DEVELOP AND UTILIZE THEIR OWN ABILITIES AND INITIATIVES THAT ARE PART OF OUR "PIONEER SPIRIT", ALASKA WILL NOT ONLY SURVIVE AFTER THE GULF LEASES ARE ISSUED, IT WILL THRIVE!

FRANK NYMAN
PARNTER, TRYCK, NYMAN & HAYES
(AN ALASKAN FOR 26 YEARS)



# *Environmental Controls Costly To Consumers*

**By Tom Fink**

**TODAY WE HAVE** truth in lending, truth in packaging, truth in advertising and other "truth in" laws to protect the consumer. The purpose of these laws is to require the expression of costs and services in a language which is understandable and comparable. Hopefully, these laws will allow the consumer to make a choice as to the costs and services he uses.

One area today that affects the consumer's pocketbook to a great extent is completely devoid of the "truth in" principle. In the area of environmental costs the consumer is left in the dark. The consumer has no opportunity to compare, select or reject.

**I BELIEVE** the public is entitled to know, for example, the cost per gallon of gas as a result of the environmental controls on the trans-Alaska Pipeline. When the line is completed the costs ought to be computed. We ought to know if it's one cent a gallon, 10 cents a gallon, or 25 cents a gallon. We ought to know the increased cost per average home for heating fuel and the increased cost per average home for electricity as the result of the environmental controls placed on the trans-Alaska Pipeline.

The public is entitled to know the costs per average car for the auto emission controls that have been placed on motor vehicles in the past few years. If the cost is $1,000 per car, I suspect that most Americans, except those living in smog-ridden Chicago and Los Angeles, will believe that cost is too high for the benefits received.

The consumer is entitled to know the average cost of the increased electricity bill, which is directly connected to environmental controls placed on utility plants. The cost of cleaning smokestack emissions and cooling water ought to be translated to an average increase in utility costs for a home.

**ABOUT A YEAR** ago, Mr. Train, head of the Environmental Protection Agency, estimated that the cost for environmental clean-up of utility plants in the United States would be something like $27.5 billion. This figure is meaningless to the consumer. We need to know if it will raise our light bills by $5 a month, $20 a month, $40 a month or whatever the figure is.

When an environmental agency builds buffer zones into subdivisions for esthetic purposes, we ought to be told the increased cost per home built in that subdivision as a result of that imposition.

Needless to say, we ought to know in advance of the imposition of the environmental restriction what the unit cost will be.

All of us, generally are in favor of cleaning up the environment in which we live. I believe if we had a unit cost of some of these laws and regulations, the public would decide that some of the benefits do not equal the cost.

Also prior to the imposition of environmental controls, the more difficult but equally large unit-cost figures should be attributed to a program or project. We should know how many people will become unemployed as a result of the controls.

Many plants have been shut down because of the high cost of controls. The sales of automobiles have not met expectations, partially due to environmental costs, and employes have been laid off. Steel plants have been closed because of the controls. We should know how much of the increased food production costs are due to environmental controls.

We are entitled to know the unit cost of energy that is attributable to our failure to develop coal in the western United States.

**IN OUR** hell-bent chase of the pristine environment, we have lost all sense of balance. I am not suggesting that all environmental rules, laws and regulations are improper. Some of them probably are, but the public has no way to measure or to make a decision of acceptance or rejection because we are not getting a unit cost which is meaningful to anyone.

The truth-in-lending law enables each consumer to make a comparison of interest or finance charges by any type of institution. The consumer then may purchase or not purchase for he has a rational basis to make a decision.

I estimate, without supporting statistics, that a third of our inflationary spiral is directly attributable to environmental costs. Not one day goes by but that part of the income of each American is spent to pay for various environmental controls. There are not any costs today across the country as significant to each of us as the extremely high costs of the environmental controls.

I suggest that we need a law or regulation which will give us the "truth in" environmental costs.

***Tom Fink is former speaker of the Alaska House of Representatives and a veteran Republican legislator from Anchorage.***

# *Letter*

Bob: This is what all older sanitary engineers have been saying all along but not as strongly as Kappe. We are going to hear more of this!!

## The Executive Director's Rocker

7

# Challenges to Endangered Species

*Abstract of paper presented by Stan Kappe on April 24, 1975, at the Michigan Section American Society of Civil Engineers Conference on The Engineer in Environmental Conservation, Frankenmuth, Michigan.*

Before I address myself to the subject of my presentation, I would like to state my position. As a graduate Sanitary Engineer, I grew up with a background in the service of a regulatory agency on a state level and later on a federal level in charge of a pollution survey on the navigable reaches of the Delaware River and its main tributaries.

I am a great believer in the protection of the planet Earth's environment but only to that degree that produces a return on investment whether it be with public or private funds and whether it be measured in dollars, fish, recreation, health, the well being of mankind or any other parameter that may be applicable and practicable and is not destructive to the Earth's environment and its living matter. I am not a believer, however, of just spending dollars, particularly dollars that do not produce a return on investment but are spent primarily for personal ego, greed, headlines, power and the building up of a bureaucratic empire. I am also a great believer in using good common horse sense when interpreting rules and regulations and not writing into the rules and regulations provisions that were not the intent of the law-makers.

In my time I have seen many fads come and go through cycles. They were like the old hat that was never cleaned up but dug out of the closet and reused with much ballyhoo as a great discovery and breakthrough. Unfortunately, when closely analyzed, the startling discovery suddenly turned out to be one of the old discarded hats with the same old holes, but to the grandson who found old grandpappy's hat, a most exciting discovery until the fad wore off.

Currently, EPA is reported to have a staff in Washington, D. C., many times greater than FWPCA, its predecessor, had in the entire country at its peak and is spending many more dollars on pollution abatement. And yet, measured in dollars or staff, have the accomplishments and breakthroughs been compartively that much greater? According to the complaints heard throughout the country by many in the scientific community, as well as in Congress, EPA has made a substantial contribution but, unfortunately, more so in red tape and paperwork. And, according to reports, if it were not for the reused paper program, the country would soon experience a serious shortage in paper products.

According to various sources of information, the processing of an average construction grant application is alleged to take 55 people and 2,000 pounds of paperwork, primarily due to duplicate efforts inhouse on both the state and federal level. There surely must be a more efficient pathway. Such red tape is costly to the program and to the taxpayers as well as to the consultants and municipalities in dollars and also to the goals and progress of the program. It is a good thing that the Army does not need support on an equal basis for its soldiers in the front ranks. And yet, the regulatory agencies keep on expanding and taking personnel from the front ranks where it is needed without replenishing the supply through adequate training grant programs—a very poor oversight.

The National Utility Contractors Association, Inc., is deeply concerned about the current high unemployment level in the ranks of contractors and its labor forces. In its news release dated March 12, 1975, NUCA stated, "To date, only $4.8 billion of that original $18 billion has been obligated, and a mere $571 million has actually been expended . . . far below the expectations and plans of Congress. We believe that there should be a minimum obligation rate of $310 million per month nationally, instead of the current $163 million per month. The members of our industry are deeply concerned about this, and many of them are in serious trouble. Unemployment is increasing, as it is throughout the nation, and more and more of our contracting firms are going out of business."

The basic problem and lack of noteworthy breakthrough in the art of wastewater treatment may not have been due to size and bureaucracy but, like the conglomerates in the private sector that have faltered, due to size and manageability. The real issue could be not how big can bigness expand and how big can monuments be built, but how can the increasing complexities of bigness be kept simple and manageable? The large amount of paperwork being processed by EPA may be a good example. The argument of lower costs, better efficiency and better use of skilled help through bigness to those knowledgeable of the facts is a yet-to-be-proven issue and, by many analysts of the problem, a poor answer to viability and survival.

The limits of bigness can be defined only when due consideration is given to the people problem and the drop in efficiency and productivity that is likely to occur when manageability becomes too complex. Nevertheless, the frustrating battle and power struggle behind the scenes on a local, state and federal level tirelessly goes on. The

buck. Finally stops with an overburdened taxpayer paying the bill and in the bottom drops out due to a debt-overburdened economy as the world is experiencing today, not only will the taxpayer be hurt but also the program. Also, much time will be lost trying to put the program back on solid footing.

Treasury Secretary William Simon perhaps has a better explanation. He recently was reported to have told the nation's governors that government at all levels has grown too much and deficit spending by all segments of government is responsible for the current economic problems of recession and inflation.

Unfortunately, the basic parameters for wastewater treatment have not changed very much since the '30's. The early pioneers did an excellent job, but there surely must be room for improvement. As an example, why has it taken the designer and regulatory agencies so long to recognize the fact that all wastewater treatment units, except perhaps the screening unit at the headworks, should be designed and constructed on a balanced constant-flow basis? How else can quality control be attained? How else can the findings in the research laboratories developed on a steady state basis be put into practice and be attained in the field? Can you name any other industry that would even try to attain quality control by not balancing the flow and the load? And yet the overall cost would probably be cheaper. How did the profession get into such a rut? Regulatory guidelines which require plant design on a basis of the incoming flow were certainly not helpful. This is an evil of guidelines. It takes away creative ability and the development of noteworthy improvements. Guidelines not only prolong the agony but also take away from the designing and operating engineer the incentive and the creative ability which really made our nation an industrial power.

And yet, the regulatory agencies are not entirely to blame. We must address ourselves to the incompetency of many designers who just follow guidelines because it is too expensive to do otherwise in the process of securing approval from regulatory agencies and to the equipment manufacturers who just manufacture hardware to sell. EPA did not help the situation when it took away from the designer and owner the prerogative and logic to specify and install equipment that was in the best interest of plant performance and the owner's pocketbook. And yet, when government buys, the quality product specified must be furnished. Where is the justice in such a directive? When flimsy equipment is forced on the owner, and manufacturers are forced to make flimsy equipment to stay in business, who will be responsible for the high operation and maintenance costs, down-time and impairment to the quality of the effluent that is likely to follow? Surely, no one else but the owner and the designer even though the requirement was a directive by others. Quality equipment may soon be something in the past if this directive is not corrected.

Where are the pioneers and fighters of yesterday? If the designer does not have the courage of conviction, will the owner hold the designer responsible? More than likely, and if so, will the cost of insurance coverage be more prohibitive than it is today for errors and omissions in design and construction and be as costly and as difficult to get as malpractice insurance is for the medical profession? This situation is serious. It could mean that the designer, in order to stay in business and if he is a smart business man, will be forced to write and accept contracts with fine print containing provisions that will limit the designers' liabilities and responsibilities and righteously so, if the criteria and the powers of decision are those dictated by others.

Unless some change in the guidance program is implemented to allow the grantee to select proven and reliable products, the owner is likely to end up with major maintenance and replacement considerations in future EPA-funded projects. And the major equipment manufacturers instead of spending dollars on R & D to develop sturdy and proprietary items will more than likely sit back and cheapen their products in order to stay in business.

Another example is the noise being made today about heavy metals. What are heavy metals? Are all metals heavy metals and really harmful; and, if so, in what form and in what amounts? The propaganda is not clear; it should be clarified. And yet, the unsuspecting public is likely to think from the information being distributed that all metals are dangerous. Many of the authors should know better. How many people really know that the microorganism growth in the mixed liquor of activated sludge plants is full of so-called heavy metals? And yet in the form present most of these metals do not evidence to be harmful to the activated sludge process which some people say is very touchy. The metal sodium, for example, is harmful per se but when combined with another dangerous element chlorine forms table salt which is a necessity of life. There are many other examples of metals that in one form or another are important to life. The list is too long to tabulate. And yet, the stories being broadcast to the public are difficult to understand except as an issue for use as a scare tactic to get more money to build a bigger and bigger bureaucratic empire or to support one that is faltering for an issue. If these authors do not know, they should be awakened to the fact that all life depends on a system of enzymes, numbering perhaps in the thousands, that contain so-called heavy metals. Iron in the blood stream, cobalt in vitamin B12 and copper and zinc, essential to all organisms as a constituent of many metallo-enzymes, are good examples. There are many others.

I find the criteria set up for sanitary landfills most interesting and the parameters most disturbing. There is no argument that leachates are pollutants but the degree to underground water tables needs better definition.

The question often raised in my mind is whether all refuse should be buried and covered with earth. For example, many metals stored upon the surface of the ground exposed to the atmosphere are in general harmless as metals or stable oxides. And yet, if so stored may be unlawful but lawful when buried in a landfill as a mixture with organic material. When this regulation was formulated, the decision makers apparently were not knowledgeable of the fact that hydrogen sulphide and inorganic and organic acids are produced in landfills by the bacterial decomposition of the organic matter and that these products soon attack the metals therein and convert the metals from harmless insoluble metals to soluble metal sulphides and soluble metal chlorides which are toxic pollutants, harmful to ground waters and to the bacterial decomposition process. As a consequence, the rate of decomposition is seriously retarded, because a leachate high in toxic metal complexes has been produced. Has this

criteria been really thoroughly diagnosed? Would it not have been more advisable to separate the metals at the source to the extent feasible for separate burial or for storage on top of the ground and to dispose of the organic refuse in a separate landfill and by this action take positive measures to prevent the production of soluble toxic metal pollutant complexes? If such a practice were adopted, would the pollution of ground waters from sanitary landfills be as serious an issue? Today, because of current practice, many of the landfills decompose at a very slow rate until the metals are leached out. During this period the landfills are primarily producers of a harmful leachate that could have been otherwise but, unfortunately, due to poor judgment, has been made toxic by producing pollutants in the form of soluble metal organic and inorganic chemical complexes.

The issue of ground water pollution is an interesting issue to diagnose. The earth, when properly used, can be expected to have a much better microbial and physio-chemical purification capacity than do surface waters. All ground waters are polluted to some degree. I know of none that are not. And when the need exists, mankind has learned how to make these waters, like surface waters, usable for industrial purposes as well as for human consumption.

A landfill is a cheap method for disposing of refuse, but are the criteria established conducive to good operation or to the contrary? A two-foot cover with impervious earth may keep out the rain and reduce the quantity of leachate, but it may also impair the quality of the leachate besides putting a cover on a volcano that could erupt momentarily. An impervious cover, however, does a good job of inhibiting rapid bacterial decomposition. The entrapped gasses, particularly hydrogen sulphide and carbon monoxide, generated therein by bacterial decomposition are excellent toxic inhibitors to the microbial process. Besides, the rain that is kept out is needed very much for its oxygen content and to keep the organic material moist for bacterial decomposition. Moreover, there is a potential that the extremely poisonous gas phosgene ($COCl_2$) can be formed by a reaction of carbon monoxide and chlorine. Fortunately, phosgene gas dissolved in water readily breaks down to carbon dioxide and hydrochloric acid.

Perhaps some day mankind will, if the regulatory agencies permit, recycle seed microorganisms through the landfill to hasten bacterial decomposition and so that the landfill area can and will be used over and over instead of as a sink on a once basis as now practiced and for the recovery of valuable resources. The stakes are high but not as high as other means of refuse disposal and perhaps on a sounder investment basis.

Building a wastewater treatment plant by funds provided almost entirely by an angel (federal and state grants) is not difficult to accept even though it is a false illusion and in the end it is paid for at a higher premium by the taxpayer and the fine print makes the task difficult. However, even though EPA seems to be encouraging the design and construction of plants that have the least cost of construction in order to spread the monies, it would be in the best interest of the municipalities to insist on the construction of a plant that in lieu thereof has the least cost of maintenance and operation, because to keep the plant operational yearly at peak performance without the help of an angel could be prohibitive. The pay check has only so many dollars; whereas, the rising cost demands for other necessities of life are collectively getting to become too burdensome. And yet, on wastewater treatment there seems to be very little concern by the regulatory agencies or perhaps a willingness to accept cognizance of operational and maintenance costs that may follow construction, particularly for AWT.

There is no argument about the need of secondary treatment and preferably, in the speaker's opinion, in the form of biological treatment on all inland waterways but there is argument to scientifically demonstrate the need for producing an effluent containing a biological suspended solids content less than 20 mg/l, and for AWT plants. The latter could be a detriment to the waterway instead of an enhancement if the effluent should produce an environment in the waterway optimum for the growth of high oxygen demand autotrophic plants and microorganisms. And yet, many regulatory agencies are forcing AWT on many municipalities regardless of the fact that it has yet to be scientifically proven and demonstrated that such a degree of treatment will enhance and not impair the waterway. Equally as critical and perhaps more so is the need to prove and demonstrate that the cost-benefits of AWT will produce a return for its outrageous expenditures to the public and to the waterway.

In this connection, EPA Report 660/3-75-003 dated February 1975 entitled "Eutrophication of Surface Waters—Lake Tahoe's Indian Creek Reservoir" is extremely interesting and informative. Apparently the removal of phosphates and BOD to the levels of 99.5% and 99.8% respectively at the South Tahoe AWT plant according to the report is not the answer for weed and algal control in ICR (Indian Creek Reservoir).

According to this report . . .

"The results of the ICR studies indicate clearly that purifying wastewaters to the highest degree possible by current technology does not insure its optimum suitability for all further purposes, but rather that design parameters must eventually include the entire system."

Moreover . . .

"the STPUD AWT plant is a very efficient system for removing phosphorus, and ICR is a good system for removing nitrogen." And yet, according to the report, aquatic weed growth has been a major observable trend and is interfering with recreational use and a growth of blue-green algae has tainted the flavor of the trout in the reservoir and has produced a strong shoreline odor.

Studies recently made for Blue Plains, D. C., indicated that the cost for AWT at the D. C. plant is likely to be at least ten (10) times greater than that for secondary treatment including costs for amortization, operation and maintenance, and five (5) times greater if costs for amortization are excluded. These costs are likely to be higher, because since the study was made, chemical and material costs have skyrocketed.

In the case of Blue Plains the above studies further indicated that if the proposed 309 MGD AWT plant were constructed and put into operation, the yearly operating and maintenance costs excluding amortization would be approximately $75,000,000 per year. The question arises, for what proven asset? In Europe at least the kings put their wealth into structures and art that had

be and culture and added to the wealth and well-being of the country. The question remains: Will the AWT increment be a sound investment or a "Pink Mirage" on the horizon? Will the taxpayers of the District of Columbia and the surrounding areas in Maryland and Virginia who contribute to this regional plant put up with such exorbitant expenditures annually? My guess is not likely, because all of these political entities are now having trouble raising money to meet budgets. How long can any municipality withstand such high operating costs yearly for a speculative venture regardless of size?

After much noise in the press and otherwise by local interests about costs and need of AWT, the message apparently got through to EPA. During the month of February 1975, EPA announced after studying the staggering rise in energy and construction costs and the need for denitrification at Blue Plains that the denitrification facilities of the Washington area AWT plant would be delayed at this time. This stage, according to the announcement, would have cost $104 million to build and operating costs would have been an additional $14.1 million yearly. It would also use large amounts of electricity, methanol, and other resources. There are implications that the nitrification stage might have also been delayed if that stage had not already been under contract. This decision must have been very difficult to make. Regardless, EPA should be commended for making such a wise decision even if it did hurt.

The nitrification stage to be installed at Blue Plains, though costly, should provide some answers to the wisdom of such a large expenditure. The nitrifiers, nitrosomas and nitrobacter are reported to be strictly aerobes closely adhering to solid particles. They also are reported to be adversely affected by light and chlorides of many common metals, and are generally not found throughout the depth of a waterway but only at the bottom of inland waterways and the ocean at the sediment-water interface where the bacterial concentration and ammonium ions adsorbed on the clay particles is important factor in nitrification. Perhaps, not too much unlike the nitrification which takes place in the lower reaches of deep trickling filters where it is dark, the organic content is low, and the high carbon dioxide content and the presence of simple inorganic compounds produce an optimum environment for the autotrophic nitrifying organisms. Until the erosion-sediment run-off from non-point pollution sources is abated, the bottoms of waterways will continue to be a prolific breeder of nitrification and it is extremely doubtful if the solution of the problem will be enhanced by the removal of nutrients from wastewaters. The solution is more likely to be in the use of some inhibitors or nutrient inactivants. The studies in this direction being made by EPA at the NERC-Corvallis laboratory are commendable. Its press release dated March 1975 on Zirconium as a phosphorus inactivant looks promising. According to scientific references, Zirconium compounds have been demonstrated to be powerful algaecides and alone have no significant bactericidal effects. In its experiment, EPA is using Zirconyl chloride as the nutrient phosphorus inactivant.

On nutrients, the Fifth Annual Report of the Council on Environmental Quality to Congress on its 1974 findings as required by law is not very encouraging. The report in part states and I quote ". . . The most disturbing trend regards nutrients. Up to 84% of the reaches exceeded phosphorus and phosphate reference levels associated with potential eutrophication and up to 54% of the reaches showed increased levels in 1968-72 over the previous years. Nitrate levels also increased in 74% of the reaches examined. Approximately one-fourth of the reaches exceeded nitrate levels."

The report further states, "In summary, the EPA study provides a mixed picture regarding trends in water quality. For oxygen demand and bacteria, progress is evident. With regard to nutrients, the disturbing trends reported in our (CEQ) 1972 Annual Report appear to have been confirmed."

If this trend continues, something will have to be done quickly because currently AWT is not too unlike a cost of living clause. Somewhere there has to be an end to the rainbow and Santa Claus.

The implication that 4.5 pounds of oxygen are required to oxidize one pound of ammonia may be stoichiometrically correct. But the implication that all ammonia present in wastewaters and in waterways will ultimately be oxidized to nitrates and such an oxygen demand will be stressed on the waterway can hardly be true. This fact seems to be substantiated by the large unaccounted loss of ammonia scientifically documented in the limnology of Indian Creek Reservoir. The derivatives of ammonia are too many for only such a pathway to be followed. There are other pathways through which nitrogen can be released to the atmosphere from organic-inorganic complexes besides the nitrite-nitrate denitrification pathway. And I know of no policeman or other force which controls such a pathway in wastewater treatment or in waterways. At least, the manufacturers of blowers and other oxygenation facilities are very happy that there is such an implication and requirement.

The situation is not very encouraging. On the one hand, in order to increase the productivity of fish the Fisheries agencies who should know something about fish and their environment are encouraging the input of nutrient phosphorus at the rate of 35.2 pounds per acre, which is more than 3.8 times the amount entering the alleged P heavily polluted Lake Shagawa, Minn., waters. On the other hand, EPA is spending tremendous sums of money for an EPA sponsored nutrient removal project at Shagawa Lake to improve fishing.

My bet is on the fisheries agencies. When the water pollution regulatory agencies were making much noise about the "dying Great Lakes" and pollution from phosphates, the fisheries agencies, according to the press, quietly studied and learned the causes—Lamphrey eels which infested the Great Lakes when the Great Lakes were opened to the sea and overfishing by commercial fishermen. With both problems solved, according to the news media including the press and TV, the Great Lakes today are considered to be one of the best fresh-water fishing grounds in the world. And the talk of the adjoining communities in both the U. S. and Canada is about the fine catches of a variety of good-size fish including salmon and lake trout. And yet, according to the water pollution regulatory agencies, if the pollutant P had not been removed, the Great Lakes were doomed.

Nutrients are not an evil ingredient as the propaganda machines seem to indicate but to the contrary a necessary ingredient for growth of all living matter. The amounts needed are very small. A threshold limit for P below

.003 mg l to control algal growth from all sources—the air, the soil and the waterway—is in my judgment a hopeless task. If algae is a problem, there must be a much better and more positive method than restricting the use of P or by its removal from wastewaters. The use of nutrient inactivators looks more promising.

If the nutrient P were ever brought down below the threshold level in a waterway, there could likely be a greater cry from environmentalists and the general public. Because without the nutrient P, the waterway would soon lose its capacity for productivity of fish and the waterway not being able to support fish life and other aquatic life would soon lose its recreational value as well as its place in the food chain.

The nutrients that were washed into the waterways and deposited in the earth and in the bottom of streams and lakes eons ago are today through the progress and growth of civilization and industrialization being recycled in ever-increasing amounts in the form of fossil fuels, fertilizers, etc.—all a part of the complex synergistic system of the food chain and life which today some seem to be trying awfully hard to destroy. Whereas, to feed the growing population and civilization with its inhabitants be it mankind, fish, birds, animals, microorganisms, etc., more nutrients have to be mined and produced as chemical fertilizers so that the commercial fishermen can catch more fish, the farmer can grow more crops per acre, to keep the human and animal population from starving, and so that the fisheries agencies can produce more and bigger fish yields per acre as food and for recreation. To keep these nutrients cycling, the ways of nature are slow but spectacular through turnover and upwelling of the nutrients that had accumulated on the bottom of inland waterways and on ocean bottoms and on land by winds through the atmosphere, erosion by rainfalls, by the growth of all types of vegetation, by the earth being turned over by winds, earthquakes, volcanic eruptions and by the farmer's plow and earth moving contractors besides its inhabitants. Fortunately, most the nutrient P is in the insoluble form and is slowly hydrolyzed by nature for use by all living matter so that the source should always be more than necessary. However, the Institute of Ecology reports that phosphate supplies might limit population because the supply of phosphates could be depleted in 100 years.

Today I find myself not only on the growing list of concerned citizens due to the undue high stakes being imposed on the taxpayer for undemonstrated and scientifically unproven AWT needs but also as a concerned registered professional engineer because the stakes are too high for the engineering profession to allow itself to being lead instead of leading the way. It's about time that the engineering profession became involved in politics and stood up back to back to be counted and fight for the right to think and the right to exercise creative engineering ability. The day of the ivory tower and hiding under a shell are gone. You better believe it! Only the strong will survive. The weak will only end up as an endangered specie and in the evolution gradually disappear perhaps as a technician, clerk, or you name it.

For the future, the crystal ball indicates that the standard of living, particularly that enjoyed in our nation, will in all probability be materially lowered and so will the standards of water pollution abatement, particularly the need for AWT. This time, however, by the buck being dramatically stopped by the taxpayer. The overburden is getting louder with each passing day; Blue Plains is an example. The crisis could occur with a crash and a sudden downfall, the cause — the energy crunch, double-digit inflation and shortage of critical resources. Due to the higher cost of fuel and other forms of energy that the public will soon be forced to pay, there will be fewer dollars left in the pay check to spend for other priorities in life. As a consequence, a marked drop in our nation's standard of living can be expected to follow as well as many of the grander dreams of water pollution abatement.

In the period of readjustment that will follow, the engineering profession will again be called upon to use its creative and development ability. Only this time let's get involved in politics and like labor fight for our rights and particularly for prompt payment for services rendered. Prepayments, progressive payments and closure of final payments can only be attained if the engineering community fights for such provisions as a body. Today the engineer is often the last person to be paid and, unlike the merchant, banker or IRS, without interest on principal past due. A smart business enterprise does not operate too long on such a basis, particularly when the client has invested the monies due in short-term securities to make money on someone else's money.

The time has come for the engineering profession as a whole to consider the inclusion in all engineering contracts clauses that will:

1. limit responsibility and liability to the directives and guidelines issued by others;

2. contain provisions for prepayments, progressive payments, and final payments;

3. require that all payments be made on a net 30-day basis with a penalty for delayed payments (depending on current interest rate) on all overdue balances;

4. other provisions that will improve the engineer's cash flow position. In this connection, I would like to refer you to an article published in the September 1972 issue of The Diplomate newsletter of the American Academy of Environmental Engineers entitled "Cash Flow for Meeting Consulting Engineers Day-to-Day Expenses" by Samuel I. Zack, Diplomate and retired Senior Vice President and Vice Chairman of the Board, Gannett Fleming Corddry and Carpenter, Inc. His advice at that time is still timely.

In summary, AWT could prove to be not too much unlike a cost of living clause, a dangerous plum, to the recipient and to the financial security and economy of the country.

During this critical period of unemployment and financial stress throughout the country, if Congress and its agencies are interested in (1) spreading monies over more jobs, (2) putting more people to work, and (3) completion of government-funded projects at reasonable costs and within the funds allotted, Congress should face the facts and legislate against all cost-of-living clauses, escalation in bid prices, AWT beyond the degree demonstrated and proven to be warranted and vote for repeal of the Davis-Bacon Act and related laws now on the books.

# FORUM

Opinion/Analysis/Commentary

# ...ergy:

## 'Wartime-like effort is needed to avoid a major catastrophe'

By David R. Williams Jr.

About 100 years ago petroleum began to enter our lives and thereafter irrevocably altered them. We never will be the same again no matter how much we try to return to the simplicity of an agrarian community. Many respected voices are preaching just such a return, but the reality is that we cannot go back. The main reason is that we surrendered, along with our rural society, a tremendous self-sufficiency and resilience. Today in our urban mode, built on high energy consumption, most of us are too far removed from producing our own basic needs. We must depend upon so many complex systems and utilitarian functions, each of which must operate efficiently or the total structure is endangered.

Our complex systems have become highly interdependent and therefore quite fragile. One monkey wrench could upset the whole works. It is not inconceivable that another 1930s-type depression or another war could cause a "civilization collapse". The crisis of finding a substitute for rapidly depleting petroleum qualifies as such a monkey wrench.

The energy crisis seems to have abated in 1975, with no more lines at filling stations, storage tanks full and tankers laid up for lack of cargoes. To think it has gone away is to ignore the long-range inevitable problem that is only a matter of time — *we are probably going to run out of oil and gas sooner than we can prepare ourselves to do without it.* Once we all face this we can set about finding the alternative energy sources that will replace petroleum. When we all understand this hopefully there will be purposeful and united public support for the large programs that are urgently needed. The "collapse syndrome" is not remote, and there is a point at which it will be too late, at any level of effort, to extricate ourselves.

All of this may sound alarmist when oil and gas seem again to be adequate, but in the winter of '75-'76 when gas is curtailed to much of American industry, and by the summer of '76, when the queues form again at the gasoline pumps, it may look different. Let's look at what must happen within the next generation and what it will mean.

(By the year 2000, natural gas will be exhausted and oil supplies will be down to a trickle.)

HOUSING: By then electric heating for homes will be predominant (some improved coal furnaces, of course, will survive). This will make a difference in the type of home in use. The single-family unit, no matter how well insulated, will be a luxury for the wealthy. Multiple-unit condominiums and apartments will have to do for most of us. Living will be more concentrated but there will be more "green belts" and "commons" where community life can be restored. Surface priorities may be allocated by "total zoning". Real estate development will concentrate on the typical large complex of integrated living, shopping, recreation and work space, and not on more urban sprawl.

TRANSPORTATION: The return to "public transportation" will have occurred, with mass transit grids linked by interurban systems. The automobile may only survive as a standardized, interchangeable electric drive unit that can be stacked and stored at mass transit interchange points. It would be used for short lateral distances and the car driven home from work would not necessarily be the same one left at the mass transit terminal on the way to work. Cities will be laid out to be concentrated along the transit corridors.

ENERGY: We are entering an electric power era, when most of the substitutes for vanishing petroleum will be converted to electrical energy. For the next 10 years, the major remedy will be steam coal. Coal production is forecast to double by 1985, with most new production coming from large surface mines in the Rocky Mountains region. Nuclear power will be slow to reach its full potential. Coal will replace oil and gas in most industry processes.

Obviously, these changes contemplate a virtual rebuilding of our urban society. The problem will be to substitute essential rebuilding to take the place of those areas of industry that will be phased out or reoriented. Perhaps the huge auto industry complex can find full employment in the vast energy and transport systems that will be needed if the change can start now.

The question is whether we will consciously rebuild our industrial society and reorient the economy upon which it is based or whether brutal changes will be imposed upon us after it is too late to adjust.

The possibility of our becoming self-sufficient via Project Independence by 1985 has passed us by. It should have begun 15 years ago. At this late hour, survival of our way of life on a reduced standard of living is our best hope. It is a struggle that will require all of our ingenuity, technology and industrial resources just to phase out dependence upon petroleum over the next 25 years; keeping in mind that our ultimate dependence upon it must end in any event.

While some experts are predicting a leveling, or even dropping off, in the world price of oil, the more realistic assessment is just the opposite. Even if we ultimately phase out our dependence upon foreign oil there is little chance that it will not continue to rise rapidly in price over the next few years. A world price of $20 per barrel by mid-year 1977 is a definite possibility. Therefore, there is not enough time to avoid the near-term crisis; our battle is longer range, not only to prevent oil from rising to much greater prices in the 1980s but to find its total replacement by the turn of the century. To emphasize again, we have a choice of continued world depression or a total marshalling of our economy to the problem.

The energy crunch has been predictable for at least 20 years, and it comes as no surprise to those who have been following it closely. The shocking aspect of the crisis is that we have no federal government planning facilities that might have anticipated this situation, or even yet, which might plan our way out of it. The federal government is making its policies upon a fallacious assumption that the crisis can be contained by normal "business as usual" methods, when only a wartime-like mobilization of our industry and economy may be able to do the job ahead and avoid a major catastrophe.

The period 1973-74 may therefore represent an all-time turning point in the course of history; that point where the fragile natural underpinnings of our industrial society have suddenly become exposed. It came as an unpleasant revelation to most of us to find that we have built a system far too dependent upon what was thought to be an inexhaustible supply of low-cost energy and natural resources. We are faced today with having the burden placed upon one generation for all of the past generations of deferred costs resulting from "high grading" of convenient natural resources and the avoidance of environmental compatibility.

Energy is just a symptom of the problem that has surfaced in our time. At the root of it is a basic change in the relationship of man's efforts to his rewards. We have designed and built a wasteful industrial society upon the assumption that human labor would continually increase in value while products of its labor decreased in cost. Labor productivity began to decline in the middle of the last decade and our failure to adjust has been responsible for a huge inflation and debasing of our currencies. As a result, the relationship between an hour of labor to a bushel of wheat, a barrel of oil or a ton of coal may have changed for the foreseeable future.

The many voices in the academic world that were predicting a "leisure society" and the 20-hour work week were counting upon continued cheap resources and even more so upon cheap capital. They did not account for the finite nature of natural resources, nor did they comprehend that the great capital formation in past history had benefited so largely from huge injections of immigrant labor, homesteaded land and low taxes.

The leisure hypothesis assumed that technology would bring "new machines" to enhance productivity and place a constantly higher price upon labor. It reckoned without the lapse in capital formation that has occurred, together with the corresponding lapse in technology over the last 15 years. The lag in technology is especially worrisome, since technology is still our greatest hope. Massive military and space programs have monopolized technology, causing it to be concentrated in large unresponsive government contractors that replaced the variety of initiatives that might have been expected from a greater proliferation of technical businesses. Again, the prevailing public mood has placed technology in purgatory and has resulted in many tax and political disincentives to our basic American ingenuity.

The cost of providing a job in the United States has risen steadily for most of our lives; but by contrast the amount of capital invested per job has declined steadily for the last 10 years. The fall-off in new plant investment means obsolescence and capacity bottlenecks. If there were suddenly unlimited demand, plant capacity in the United States would not be adequate to bring unemployment below 5%. Furthermore, we are not generating the capital to rectify this situation. Without the large injections of capital in the past, industry must depend more upon the savings of individuals and corporations. Unfortunately, the current concepts of social justice do not recognize the importance of savings, with the result that there are many tax and political disincentives to the all important savings cycle.

More capital than ever is required to pay for the new high costs of energy. However, energy costs are only the symptoms. A general capital shortage, decline of productivity and inflation are more basic causes and would have produced some rise in energy costs even if petroleum had not been in short supply. The United States debased its currency from 1965 to 1975 trying to maintain business as usual while spending $200 billion in Southeast Asia.

It could be said then that the energy crisis is really a capital and a technology crisis. What are the solutions?

1. Changes in the tax structure to provide incentives for savings and investment.

2. Incentives to technology and subsidies for research.

3. Massive government-industry programs in energy, mass transit and urban needs.

4. Incentives for exports to balance our foreign trade position.

No half measures will suffice. It will require wartime budgets with hundreds of billions of dollars allocated to large well-planned programs.

Why such drastic action, when 13 million barrels per day (BPD) of OPEC's 40 million capacity is shut in today? The answer is this shut-in capacity will be in full demand by mid-1977, with short supply increasing thereafter, even as the world practices conservation. There is no quick way to wean industrial countries from the overdependence upon oil.

Unfortunately, our government's blueprint for energy is based upon two self-contradictory premises, no massive energy expenditures and a high degree of self-sufficiency by 1985. (The plan calls for only 4.5 million BPD of imports in 1985.) ...foreign crude in 1985 will be ... BPD. Such an importation could cost the United States more than $100 billion annually at the prices likely to prevail then. This sum would not be possible for many obvious reasons. This means either initiating the necessary programs now or accepting a drastic cutback in our economy that can only mean continued world depression.

To attain 4.5 million BPD of imports the Energy Research and Development Administration assumes reduction in the use of energy amounting to a 50% drop, from 90,000 BTUs/$ of GNP in 1975 to approximately 45,000 BTUs in 1985. There is no quick way we could phase out our automobile economy to achieve such a level of consumption. Also, without redeploying the economy to some other programs to pick up the slack, we would have deepening world depression. This is where the wartime mobilization analogy comes in. If we cut back on the economy in automobiles and single family homes we must employ it in the kind of energy and mass transit and urban projects that will take up the slack.

The Washington plan calls for no such programs. It assumes that gas will hold its own, atomic power will pick up part of the gap and coal will do the rest. It was forecast last year that nuclear power will attain a capacity of 400,000 megawatts by 1985. With the slippage of cancellations in the last year this could not be more than 250,000 MW. With all of the capital problems of the private utilities and the public disfavor of nuclear power it will be fortunate if 120,000 MW are actually achieved by 1985. The assumption that gas production in 1985 will remain at current levels is unrealistic. One of the first impacts of the energy problem will be the more rapid than expected decline of natural gas. This winter many plants will be shut down for lack of gas and by 1985 gas output will be down to half of today's production, even counting Alaska.

The assumption that coal will double in output seems attainable but the forecast that solar, geothermal and other nonconventional sources will contribute significantly is highly optimistic.

In short our government has its head in the sand, and the energy crisis will become a catastrophe if a huge mobilization is not defined and implemented very soon.

Democracy reacts slowly to its less obvious threats and challenges. We have little ability to anticipate threats while there is still time to deal with them. The result is government by crisis reflex. What is needed is some comprehensive long-range planning and a data base that can be trusted. We have many computer facilities in the departments of our government, but they seldom agree. We are like a giant 747 flying blind with all the instruments gyrating wildly.

Democracy may prove to be a transitional form of government that inevitably succumbs from the burden of excessive wishes granted to its people. There is still time to preserve the democratic way, but it will mean sacrifices and acceptance of living within our means. The remedy may be a form of government-industry planning that preserves the variety of initiatives of the enterprise system but acquires a set of instruments for navigation.

ERDA is a promising start, but we must have a comprehensive policy and program. Oil companies are cutting back exploration for lack of a policy on energy plus the new tax bites caused by the loss of depletion and foreign tax credits. Utilities are canceling new plants for lack of ability to raise capital at their present rate structure. We may be trading a years delay now for several years of catch-up later. It is almost predictable that electric power will have to be rationed in three to five years.

The point to remember is that the problem is not just energy, but the impact of energy on our economy in years to come when its shortage could cripple everything.

Williams is chairman of Resource Sciences Corp. of Tulsa, Okla., a worldwide engineering and project management company in petroleum transportation, nuclear energy, metallurgy and environmental sciences.

(58)

A Presentation to the OCS Hearings
Anchorage, Alaska
August 12, 1975
by
Robert B. Smith

Thank you, Mr. Chairman, for the opportunity to speak here today. My name is Robert B. Smith; I am President and General Manager of Central Alaska Utilities, an investor owned public water utility in Anchorage, and I previously was Public Works Director for the City of Anchorage. It is my intention to address an aspect of this issue with which I am familiar, that of utility requirements in the event of large population increases in coastal communities as a result of major oil discoveries in the gulf.

First of all, I concur with the findings of a socioeconomic study made for the oil industry that it will be expensive to install or expand sewer and water systems to current environmental standards; and that the extent of that cost will depend on a broad spectrum of circumstances.

Such things as soil conditions, distance to water source, density of community development and the relative size of the development are obvious factors affecting costs. It is my contention, however, that with proper advance planning and good technical design, maximum efficiency can be achieved to hold operations and maintenance costs during subsequent operations to a minimum.

If the expansion is financed through long-term debt and if operations do not become burdensome, then the current residents of any community affected should not have to shoulder any appreciable tax load for services that do not benefit them.

The firm which I operate supplies water to some 30,000 Anchorage area residents outside of the limits of the municipally operated system. It is a private business and obviously must pay its way in order to remain in operation. Some of the areas we serve have no greater density then some of the existing coastal communities and certainly less than would be desirable in any new community development.

From my experiences with utility systems in the Anchorage area, it appears that the coastal towns should be able to meet any foreseeable utility requirements without undue burden to their taxpayers, especially if they receive some preference in federal and state funding assistance programs.

I believe that if the oil companies will work with the state and local government officials in planning and projecting the needs to provide adequate lead time, utilities can be provided to meet any reasonable requirements without seriously loading the communities capital indebtedness and property tax rates. A well balanced, productive and desirable community, an asset to the state, can be the result.

Thank you, Mr. Chairman.

Robert B. Smith

59

# The Izaak Walton League of America

INCORPORATED

BUILDING A **BETTER** OUTDOOR AMERICA

Anchorage Alaska
August 13, 1975

Subject:
Alaska outer-continental shelf.

I Sam E McDowell a director of the Anchorage Chapter of the Izaak walton league of America and chairman of our leagues Alaska fishery resources committee do submit the following testimony on the OCS issue.

In years past the development of our petroleum resources in Alaska has been a very controversial issue among Conservationists.

1st was the development of the Swanson river and Cook inlet. Then Prudhoe Bay, and the Valdez Pipeline was the big issue.

In each of these instances the developers have gone to the ultimate limit to preserve the ecological integrity of these developments. It is therefore assumed that these same oil companies will do whatever is necessary to retain the integrety of the outer-continental shelf.

Our League believe we are obligated to consider the economic aspects of these developments if we are to avoid the possibility of continuous fuel shortage and paying

(1) 730
(2) 732

# EXPLORATION SERVICES CO., INC.

ALASKA OFFICE - POST OFFICE BOX 1611 - ANCHORAGE, ALASKA 99501 (907) 272-2419

August 4, 1975

Director (732)
Bureau of Land Management
Washington, D.C. 20240

Gentlemen:

RE: Proposed Lease Sale (39)
Oil and Gas on the Outer Continental Shelf, Gulf of Alaska

This letter is submitted for your consideration relative to proposed lease sale (39).

Exploration Services Co., Inc. has conducted extensive coring operations in the proposed lease sale area during the months of June, July and August of 1971 and again during the months of June and September of 1973. Our operations were conducted in a safe and efficient manner and at no time did the situation arise where there was any danger of creating an environmental hazard or was our crew or vessel at any time in danger as a result of the elements.

Our basic purpose in the Northeastern Gulf of Alaska was to acquire environmental, engineering and geological data for the petroleum industry as it relates to evaluation of the potential and possible hazards related to operating in the area. Through our efforts, the Industry gained a significant amount of information which should place them in a position of operating in a safe and efficient manner in the area.

During the 1971 operations 19 oil companies participated in the project and have this information available to them. During our 1973 operations in the Gulf of Alaska 11 oil companies participated and again have this information available to them.

Due to business commitments, we are unable to present this testimony at the hearings in Anchorage, Alaska, and are hopeful that this submittal will be considered as a part of your findings on the proposed lease sale.

Very truly yours,

B. C. Osborn
President

BCO/mlh

R & M CONSULTANTS, INC.

ANCHORAGE
FAIRBANKS
JUNEAU

THREE IEES PROF. BLDG. • 6-1/2 MILE GLACIER HWY. • P. O. BOX 1786 • JUNEAU, ALASKA 99801 • TELEPHONE 907-789-0880 • TELEX 090-35419



August 15, 1975

U.S. Department of Interior
Bureau of Land Management
Alaska Outer Continental Shelf Office
800 A Street
P.O. Box 1159
Anchorage, Alaska 99501

Gentlemen:

On August 13, 1975, continuence of public hearings were to be conducted at the ballroom of the Anchorage Westward Hotel. During the evening of August 13, 1975, our Chamber of Commerce, represented by Malcolm A. Menzies, was to give verbal testimony. His time schedule is shown on the attached agenda which was anticipated to begin at 6:45 PM. Mr. Menzies arrived at the Anchorage Westward Hotel at 6:30 PM after flying from Juneau to participate. Upon arriving at the Anchorage Westward Hotel we found that the hearing had been completed with no formal acknowledgement by your committee. We feel this was an unfair and unjustified act by your committee. We are submitting a draft of the informal statement that Mr. Menzies was to make at said hearing. We will also submit a more formal statement in writing to your office prior to the expiration date of August 29, 1975.

Sincerely,

Malcolm A. Menzies
Juneau Chamber of Commerce

MAM:emm

Attachment

R & M CONSULTANTS, INC.

ANCHORAGE
FAIRBANKS
JUNEAU

THREE ~~EES PROF. BLDG. • 6-1/2 MILE GLACIER HWY. • P. O. BOX 1786 • JUNEAU, ALASKA 99801 • TELEPHONE 907 789-7580 • TELEX 090-35419



August 12, 1975

U.S. Department of Interior
Bureau of Land Management
Outer Continental Shelf Office
800 A Street
P.O. Box 1159
Anchorage , Alaska 99510

Re: Prpoposed Lease Sale (#39)
Oil & Gas on the Alaska Outer Continental Shelf
Gulf of Alaska
Public Hearings - August 12th & 13th, 1975

Gentlemen:

As a member of the Board of Directors, Greater Juneau Chamber of Commerce, City & Borough of Juneau, Alaska, I wish to start our public testimony in a positive light. Our body totally favors, and is in support of,the OCS proposed leasing to be conducted during late Fall-early Winter, 1975. To amplify and expand the Juneau Chamber of Commerce's position, a formal written statement will be submitted prior to the closing date of such submittals of August 29, 1975. Hopefully, to amplify this formal written statement, and to render some meaningful constructive criticisms concerning the Northern Gulf of Alaska Environmental Impact Statement, this testimony is submitted. As Laymen within the Juneau Chamber of Commerce, we cannot fully render an in-depth, meaningful constructive crtique of the Environmental Impact Statement. On the surface the volumes of data submitted appear quite complete, well prepared and well documented with the possible exception that our coastal community and its possible relative, long term substantial impact on OCS has been omitted. Whether this omission is planned or ignored we cannot determine. We are laymen with respect to the oil industry and cannot comment on the many and various aspects of the technical and support data within the draft Environmental Impact Statement. As far as energy needs in the United States, and in particular Juneau, are concerned, we only have to examine the damage rendered to our schools by the fuel shortage two short winters past. The fuel shortage and our community's effort to conserve energy (in co-operation with our government's request) has placed grim reminders in our public school systems by damage done through this conservation attitude and lack of energy resources which affected the public buildings considerably. Therefore, as a community we support natural resources development, and in particular, Outer Continental Shelf development.

Although technical expertise cannot be given by ourselves, as previously stated, we can address that portion of the statement (Environmental Impact) entitled "Social & Economic Environment of the Northern Gulf of Alaska Coast." Within this portion of the statement Juneau was wrongfully omitted. Geographically, the citizens of our community are as close or closer than other communities which were reviewed and discussed within this portion of the Environmental Impact Statement. As all are aware, Juneau presently is losing, or is about to lose, its prime source of economic endeavor, and that is government.

We are a community seeking economice deversification in an aggressive manner. Whether we will have or will not have a meaningful role in OCS activities, we will not change our endeavors to seek economic diversification. We feel there will be a role for Juneau within substantial long-term on-shore OCS impact. Your ability to ignore a community which presently has proper and adequate planning and zoning, vast industrial area at our Municipal Airport, and also within our harbor (Gastineau Channel), ignore established transportation systems, adequate school facilities, a housing vacancy factor, cultural activities etc., that would absorb much on-shore long range impact that other communities may fear or possibly welcome, but cannot financially support is indeed questionable. Granted, many think only of Anchorage as an access for on-shore support yet our community has many, if not all, of the advantages of Anchorage, and also has them on what many describe as a more pleasing scale.

In a reverse situation the oil industry sponsered studies by the Gulf of Alaska Operators Committee. They considered Juneau and the possible OCS on-shore impact of our community in their study. The study I refer to is: "An Economic and Social Impact Study of Oil-Related Activities in the Gulf of Alaska". Why, gentlemen and ladies, can industry be considerate of a community that seeks economic diversification and has plans that can be implemented, and further welcomes new industry, when the Federal Government cannot? This question, gentlemen, must be answered and it must be answered within that portion of the Environmental Impact Statement related to the "Economic and Social Impact of Oil-Related Activities in the Gulf of Alaska..

The shortness of this tesimony should not be considered as our community's lack of interest in OCS activities. On the contrary, we demand that your draft Environmental Impact Statement be revised to include the availability of on-shore resources that can support valid OCS activities in the Gulf of Alaska by Juneau.

Sincerely,

Malcolm A. Menzies
Juneau Chamber of Commerce

MAM:emm

HEADQUARTERS

# ALASKA MINERS ASSOCIATION, INC.


PRESIDENT
Wm. L. Waugaman
270 Illinois Street
Fairbanks, Alaska 99701
Phone 456-5005

VICE-PRESIDENT
Charles Herbert
1435 Inlet Pl.
Anchorage, Alaska 99501

SECRETARY
Dr. Ernest N. Wolf
P.O. Box 80989
College, Alaska 99701
Phone 479-2156

TREASURER
Gene Yurkovich
P.O. Box 3018
Fairbanks, Alaska 99701




August 7, 1975

Director (732) Bureau Land Mgt
Washington,
D.C. 20240

Dear Sir;

Attached is a statement by the Alaska Miners Association regarding off shore drilling in Alaska waters which we are submitting for the record.

Our Association is statewide and represents in excess of seven hundred members.

Sincerily,

William I Waugaman
President
Alaska Miners Assoc.

WIW/flh

My name is W. I. Waugaman. I am President of the Alaska Miners Association, which has more than 700 members. Until assuming my present position, I was General Manager of Usibelli Coal Mine. My active mining experience in Alaska goes back to 1939. I served as a State Senator in 1967-68.

My views are straight forward--the mineral resources of Alaska and the Alaska OCS should be developed. I support the proposed oil and gas lease sale in the Gulf of Alaska.

Your announcement of hearings stated that you wish to develop all views on five specific points.

On the first, the environmental impact of the lease sale, my view is that it would be minimal. The oil industry has an enviable record offshore. It is my understanding that in the drilling of thousands of wells offshore, there have been few blowouts and that of these, there was only one incident where oil went ashore. That was in Santa Barbara, of course. To me, this is an excellent record.

The second point has to do with the environmental effects which cannot be avoided if the lease sale is held. The thing that occurs to me is that there would be platforms in the Gulf. This raises concerns about fishing and shipping--but these things have apparently been worked out in other areas where offshore platforms are found.

As to the third point, alternatives to the proposed action, frankly, I see none. I'm convinced the United States needs the oil and if the rest of the country gets hurt, Alaska is bound to be affected. Any longings I might have for the good old days certainly don't include the economic situation of the country in the 1930's. I'm for economic development--and I believe most Alaskans are.

Your fourth point has to do with trade-offs. Do we get the oil and gas out and take a chance on messing up other uses of the Gulf? At least that is how I

read your statement. My view is that we are not in an either/or situation. We can have both. Let's produce the oil and protect the environment.

The fifth point asks if any irreversible or irretrievable commitments of resources would be involved in the sale. Well, certainly, we would be committing to use up the oil and gas. But, we have no other option because other sources of energy are just not available. And sources such as the sun and the tides and others cannot be perfected for many years.

My support of the lease sale is, I believe, support for the country, this state, and the miners that I represent.

I believe that economic development in this state--which for the time being means oil and gas development--is essential to miners. And miners are important, because the production of hard rock base minerals is going to be the backbone of the state's economy somewhere down the road.

The hard rock minerals are here and the nation is going to need them. I will support any reasonable measure that contributes to the miner's capability to get our minerals to market.

Let me give an example of how something done by the oil industry may be of considerable value to miners. This is the building of roads. Placer mines along the route of the trans-Alaska pipeline may now prove to be economical ventures because miners will be able to get in and out by truck rather than by aircraft. Lack of transportation facilities is one of the major problems facing the mining industry in Alaska.

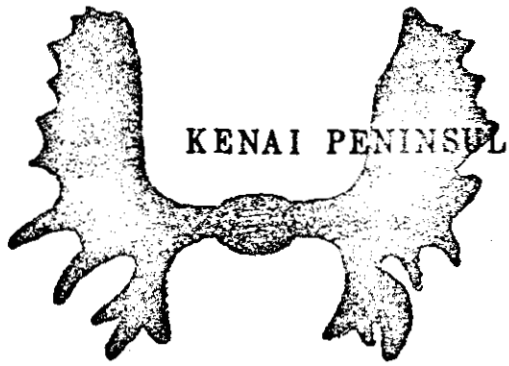
Aside from my interest in mining--although this also affects miners--I am appalled at the quadrupling in the price of foreign oil and the effect of that on the nation's economy. Our nation is so geared that a reduction in oil and gas supplies would hold those at the bottom down and throw some who have gained a better way of life back down to start all over again. To permit this is foolish.

Our country still has considerable oil and gas. I believe we should let the oil companies go out and find it. And I hope they find enough to permit the country to stay afloat if the Mideast countries decide to place another oil embargo on us.

In closing, let me state my own personal alarm at the trend in our state government. The present administration is, I believe, anti-development. The environmentalists on the Governor's staff will no doubt speak to you in terms of orderly, cautious development. The record suggests no development. If this trend continues, I believe all Alaskans will be hurt. I also believe that the State's resources can be developed with due regard for the environment. I believe the Federal government's resources off our shore line can be developed safely, also.

Again, I urge the timely sale of oil and gas leases in the Gulf of Alaska.

Pres.



KENAI PENINSULA CONSERVATION SOCIETY
P.O. BOX 563
SOLDOTNA
ALASKA 99669

4 August, 1975

Alaska OCS Office
117 W. Fireweed Lane
Anchorage, Alaska

279-4578

CONFIRMATION COPY - NIGHT LETTER

Kenai Peninsula Conservation Society requests testify, 8-12-75.

Fa[illegible]ing appearance, Society protests this wire OCS leasing schedule because adequate knowledge of area unavailable. Operational information elsewhere not necessarily transferable Alaska Gulf.

Rushing leasing, poor developmental, economic, social, environmental policy.

Recent Gulf studies appear designed support pre-determined leasing decision regardless consequences.

James E. Fisher

JAMES E. FISHER
President

cc: Mike Gravel

P RT OF SEATTLE
P. O. BOX 1209 / SEATTLE, WASHINGTON 98111

Mr. Edward Hoffmann, Manager
Alaska OCS Office
P. O. Box 1159
Anchorage, Alaska 99510

Statement By Merle Adlum, President,. Port of Seattle Commission for the record of the Anchorage hearing, August 4, 1975 concerning the proposed Northern Gulf of Alaska Lease Sale:

Seattle has been serving Alaska since Alaska firmly established us as its southern seaport during the Alaska Gold Rush of the 1890's. Construction of the Alyeska Oil Pipeline has further emphasized Seattle as Alaska's primary "lower 48" seaport, as well as establishing Alaska as Seattle's most important trade partner. The expertise we can contribute to this hearing is to assure all concerned that transportation facilities needed to equip northern Gulf of Alaska oil operations, from the lower 48 states, will be adequate. Alaskan transportation is our business and we have been working hard and steady to develop shipping facilities which will be able to meet any contingencies of the expanding Alaska economy. Even a project of the magnitude of the Alaska pipeline has not strained our service capability to Alaska. In the past five years, no less than eight major maritime facilities, costing over 18 million dollars, have been purchased, renovated or expanded in the Seattle harbor to meet Alaska's fast growing maritime shipping needs. Furthermore, air cargo and air passenger facilities have been greatly expanded at Seattle-Tacoma International Airport, much of which is to accommodate increasing Alaskan business.

Marine transportation facilities in Seattle which serve Alaska include rail barge, container ship, container barge, ocean-going liner and contract barge, roll-on/roll-off (container ship) and ferries of the Alaska Marine Highway. These shipping operations serve diverse Alaskan shipping facilities ranging from modern accommodations such as those of the Port of Anchorage to relatively primitive accommodations at Prudhoe Bay on the North Slope coast of the Arctic Ocean.

We have reviewed the Environmental Impact Statement of the proposed Northern Gulf of Alaska oil and gas lease and find it complete for transportation aspects within the northern Gulf of Alaska. However, it does not specifically include the excellent and varied transportation services which are available to the area from harbor locations in Puget Sound. At the present time, southeast Alaska is primarily served by Puget Sound shippers. Prince William Sound and Anchorage's Cook Inlet is also well served by numerous types of

scheduled and unscheduled shipping services from Seattle. Northern Gulf of Alaska waters, being in between, can have added transportation service from Seattle as demand requires, and with relatively little need for additional investment in port facilities. Based upon our experience with the Alyeska Pipeline project and years of accommodating Alaska's shipping needs, the additional 6,280 workers projected for the 1985 hypothetical "high" of Valdez, Cordova, Seward and Yakutat (page 572), could be easily served with existing or anticipated transportation improvements from Seattle. Furthermore, the shipping needs of the "net" baseline population increase of 11,487 (page 592), for Anchorage and North Alaskan Gulf communities, can also be accommodated with little additional shipping facility capacity.

We would like to go on record as being in favor of approval of the proposed northern Gulf of Alaska oil and gas lease. We feel we are well prepared to adequately accommodate the anticipated additional external shipping needs of the area, when, and if, oil and gas offshore exploration and/or development occurs.

Sincerely,

Merle D. Adlum
President
Port of Seattle Commission

August 1, 1975

2/09

Box 2025
Anchorage, Alaska 99510
August 12th, 1975

Hearing Officer
Alaska Outer Continental Shelf Office
U.S. Department of the Interior
Bureau of Land Management
800 "A" Street
Anchorage, Alaska 99501

Sir:

The Alaska Chapter of the Sierra Club wishes to advise that we plan to file a written comment on your Draft Environmental Impact Statement on Proposed Oil and Gas Leasing in the Northern Gulf of Alaska before the September 1 deadline. We will not, however, be making an oral statement at the public hearings being held on that subject in Anchorage on August 12th and 13th.

Sincerely,

Gerald R. Brookman

Gerald R. Brookman
First Vice-Chairman (Acting Chairman)
Alaska Chapter, the Sierra Club

Box 2025
Anchorage, Alaska 99510
August 12th, 1975

Hearing Officer
Alaska Outer Continental Shelf Office
U.S. Department of the Interior
Bureau of Land Management
800 "A" Street
Anchorage, Alaska 99501

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Alaska Chapter, the Sierra Club

Box 2025
Anchorage, Alaska 99510
August 12th, 1975

Hearing Officer
Alaska Outer Continental Shelf Office
U.S. Department of the Interior
Bureau of Land Management
800 "A" Street
Anchorage, Alaska 99501

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Sincerely,

Gerald R. Brookman

Gerald R. Brookman
First Vice-Chairman (Acting Chairman)
Alaska Chapter, the Sierra Club

# BRISTOL BAY NATIVE CORPORATION

P. O. BOX 237
ILLINGHAM, ALASKA 99576
PHONE (907) 842-3070

447 EAST FIFTH AVE.
ANCHORAGE, ALASKA 99501
PHONE (907) 277-9511

August 14, 1975

Mr. Edward J. Hoffmann, Manager
Alaska Outer Continental Shelf Office
U.S. Department of Interior, BLM
P.O. Box 1159
Anchorage, Alaska 99501

Dear Mr. Hoffmann:

We respectfully request that this letter be included as part of the record of the August 12 & 13, 1975 hearings regarding a possible oil and gas lease sale offshore in the Northern Gulf of Alaska.

Bristol Bay Native Corporation is familiar with the time and background leading up to the announcement of a sale, as well as the draft Environmental Impact Statement on the proposed sale. Although we naturally would like for Alaska to share in the revenue from the sale, we see no good reasons, political, environmental, or otherwise that should delay the proposed sale. We support the sale as announced, as well as additional sales in the Gulf of Alaska and Cook Inlet, in order to provide the necessary lead time for the proper research and planning prior to any future sales in the Bering Sea - Bristol Bay region.

Thank you for the opportunity to submit this letter as part of the record supporting a Gulf of Alaska OCS Sale as scheduled.

Yours Very Truly,

BRISTOL BAY NATIVE CORPORATION

Harold H. Samuelsen

Harold H. Samuelsen
President

kn

# ALASKA CONSERVATION SOCIETY

UPPER COOK INLET
CHAPTER
BOX 3395
ANCHORAGE, ALASKA
99501

STATEMENT OF THE UPPER COOK INLET CHAPTER OF THE ALASKA CONSERVATION SOCIETY AT THE HEARINGS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT ON THE OUTER CONTINENTAL SHELF PROPOSED OIL AND GAS LEASING IN THE NORTHERN GULF OF ALASKA - Aug. 13, 1975
Anchorage, Alaska

Gentlemen:

My name is Virginia dal Piaz. I am testifying for the Upper Cook Inlet Chapter, is the largest chapter of the statewide Alaska Conservation Society. We are dedicated to securing the wise use, protection, and preservation of the scenic, scientific, recreational, wildlife and wilderness values of Alaska. We offer this testimony with the full expectation that it will be listened to and weighed carefully along with the other statements taken at these proceedings.

We would like to go on record, as we have done previously, as being opposed to the proposed oil and gas leases in the Northern Gulf of Alaska at this time. The CEQ has listed this area as the last area that should be leased due to weather, oceanographic problems, and lack of sufficient data on drilling in such a subarctic environment. The draft EIS contains mostly a compilation of the known scientific data, which is not a great amount; for example population data on marine mammals, fish, etc. from too few counts. This study is a necessary beginning, but the impact on these animals and their habitat is poorly documented, and thus needs more evaluation.

In fact, on pg. 341 under III ENVIRONMENTAL EMPACTS OF PROPOSED ACTION it states:

"Much of the impact data on which this section was based, was generalized, incomplete, and not specific to the Gulf of Alaska".

With such a statement prefacing the impact section, what are we to conclude??? Obviously, much more research and data need to be collected specifically on the Northern Gulf of Alaska if a studied and intelligent decision is to be made. At the very least, this proposed lease sale should be delayed at a minimum of ½ to 2 years as Gov. Hammond suggested at the hearings in Yacatat last week, to allow time to rectify this deficiency. How can the Department make a decision with such insufficient information??? Or, has the decision already been made???

We wish to go on record as fully supporting the State Adm. position to delay the proposed sale to gather more information and allow the state at least some time to plan for impact. After all, we are presently staggering under the impact of the Trans-Alaska pipeline land construction! And now with the proposed OCS leases breathing down our necks, it seems as if the fedaral government and the oil companies are thinking of Alaska only as a "giant socket" for the nation to plug into regardless of the states needs and wishes.

It is obvious throughout the whole statement that insufficent data exists specifically on the Northern Gulf of Alaska. For example, on pg. 116 it states:

"Almost no work exists on zooplankton of bays and esturaries of the Gulf of Alaska".

And then several pages later, it lists almost all species as feeding on plankton! As these organisms are one of the basic components of the marine food chain, we suggest that not looking into the effects of chronic oil spillage on zooplankton, indeed not even knowing what is there, is a significant omission.

As another very important example, on pg. 100, under the discussion of "primary production" the statement is made that"studies of primary production for the northern coastal region of the Gulf do not exist in the current literature" and goes on to say all estimates are based on data from the Northeast Pacifie and from general knowledge of production in coastal zones. We submit the pages following that statement of estimates and species of phytoplankton are meaningless. At best, they are educated guesses. And such guesses should not be acceptable to the American people, particularly as a basis for making a decision which could forever destroy renewable food resources for a onetime extraction of a nonrenewable resource.

There is also insufficient data on climatological conditions and physical oceanography. Such factors as wind,fog, and precipitation are very severe in the Gulf and very adverse conditions for humans to be working under. Currents, tidal changes, and wave action will have enormous effects on drilling platforms and subsea units. Does the technology really exist, or is the industry extrapolating from other, not truly comparable areas??? It is entirely possible that the physical conditions of the Gulf of Alaska may be so hazardous that the cost of extracting energy in the form of oil and gas from this area is far greater than the value received.

A very important point not addressed in the EIS is the lack of a cohesive national energy plan. Until there is such a plan delineating energy reserves as to location and amount, what is the purpose of rushing in and leasing large tracts under this "energy sulf-sufficiency" banner??? In the name of action and doing something visable? We think a more democratic position would be to enlist the help of Congress and the people in determining just what is the "national interest" where do we want to go for energy to run our economy and society?? Oil and gas? Solar? Geothermal?

Alternative C - WITHDRAW THE SALE gives a viable and presently available alternative: that is energy conservation. If people can still get cheap energy (petroleum products) the incentive to conserve or decrease use is not there. The only way usage will be decreased is if the source of energy is <u>not</u> there. Nowhere in the statement is there documented proof for the <u>need</u> for more oil, in fact, it states (pg. 753) that "energy conservation offers the only option for matching energy requirements to available supply. The goals of national self-sufficiency and conservation of natural resources are best achieved through energy conservation". In other words, we already have enough if conservation measures were initiated. In the face of the enormous waste in our system, why even think of leasing the OCS off the Gulf of Alaska before first getting the "house in order"?

According to our information, the only slightly comparable area in the world for offshore drilling is the North Sea. Yet the statement continually pulls from data and experience in the Gulf of Mexico. And both the North Sea and the Gulf of Mexico have land areas on three sides - the Gulf of Alaska faces the open ocean.

In the Baldwin"s book, <u>Onshore Planning for Offshore Oil</u>, (literature cited pg. 620) several important observations are made:

1. Pg. 163 - "Unlike large oil spills which may occur once offshore oil activity begins, onshore support development will certainly occur; furthermore when offshore fields are depleted, the social, economic, and

environmental changes will remain. Ecological and economic impacts are particularly profound when oil facilitites are attracted to previously undeveloped areas... these developments make local economy entirely dependent on oil and thus vulnerable to the boom-and-bust cycle of the offshore industry".

2. Pg. 168 - "Oil companies, contractors, pipe layers and other support activities seek to minimize cost and maximize profits. They are likely to choose sites for their operations because of their own needs, not those of communities themselves".

Has the oil industry solved problems in areas where it has come in, or has it just created them? We believe the benefits of economic expansion do not outweigh the detriments to the environment and social/cultural impact on Alaskan life.

We are in a period of profound transition and rethinking of our energy usage and extraction from the earth. If it is to be believed, we are in an energy crisis. The medical definition of crisis means the turning point in an illness - the illness here being our addiction to oil. A crisis means whether or not the patient will recover or die. We will undoubtedly go through withdrawal. Will this country be able to survive on much lower levels of energy consumption? Luckily, we still have plenty of warning to reverse this addition if we act soon. It would be wise to stop seeking new answers in old solutions to our energy problems. Does it make sense to destroy our environment which gives us life , to perpetuate our wasteful way of living?

Finally, in the words of the statement itself, this whole operation has a "relatively high aesthetic degradation potential". The impact of the project has nothing but adverse effects upon fish and wildlife, coastal land use, and the economics of Alaska - another boom-and-bust to further unstabilize our state economy. Our state's most valuable natural resources such as scenery, wildlife, etc. are renewable. Should these be sacrificed for a finite, nonrenewable resource? How many tourists will come to Alaska to see oil rigs and pipelines? As the statement says (pg. 570) "the reaction of a tourist to an oil slick is unknown..."

Alaska is more important as she is to this nation, both aestheically and culturally.

In conclusion, we have several questions for the Interior Dept. to answer on the proposed lease:

1. What in depth studies have been done concerning interaction between marine traffic from the OCS activity and the supertankers from the Trans-Alaska pipeline?

What regulations will the USCG set up? They have been asked to comment on the impact statement and apparently were not consulted during the statement preparation.

2. Why can't the leases be delayed for ½ to 2 years (pg. 746) to allow for completion of all environmental baseline data to meet the Department's own objectives? (Pg. 747)
3. How much consideration is being given the proposal that the government do drilling, etc. before leasing to the oil companies? The federal government could do its own detailed seismic studies and exploratory drilling prior to leasing rather than relying on private industry to discover after leasing how extensive these publically owned resources are. The OCS areas belong to all the people of the US and they should have access to this information.
4. What about the fact that the probability of waves being over 8 ft. is 50% in DJFM, 20% in AM, 25% in JJAS and 40% in OND (Pg. 745) that there is "presently no known method of containment or cleanup that is effective in turbulent seas where wave heights exceed 8 ft" (pg.668)????? What good are contingency plans then????
5. Why should we accept a continuous level of chronic "unavoidable" oil spills? By the statements own admission they don't know the long term effects of oil pollution on the seas or life in the seas. What effect will this have upon the food chain?
6. No national energy policy, elucidated by the people and Congress with public input exists and why are these leases being offered without such a plan??? How and who is saying this leasing is in the "national interest"? What is the national interest? There are no elected officials involved in making this decision! No natural checks and balances in this issue - one person the Sec. of Interior - will make this decision.
7. What is the availability of trained technical personnel for operating and building drilling rigs or subsea units for the Gulf of Alaska waters?
8. How is Interior planning on working with the State that currently has no coastal zone management act? Who will have jurisdiction for wastewater discharge, etc.?? EPA? USCG? The state?
9. What is the critical point at which oil cannot be absorbed or elimated by living organisms? Research on this very important point is incomplete. (see The Frail Ocean, Marks).
10. What is the environmental cost (irretrivable losses) compared to economic benefits? Where is the analysis of how much energy will be used to get out the oil and gas in the lease area? What will be the net gain in energy to our country????

Manager, Alaska Outer Continental Shelf Office

P.O. Box 1159

Anchorage, Alaska 99510

Betty Varney

Cape Yakataga, Alaska 99560

15 August, 1975

Dear Sir:

I would like to express my views on the development of the offshore resources in the Gulf of Alaska. First as a concerned citizen and resident of Cape Yakataga, Alaska and, secondly as a business woman whose income is principally derived from oil and oil related industries.

Our Gulf is beautiful, virgin and really too spleddid for me to put into words. I do not know this just from reading magazines, seeing pictures or watching television; Cape Yakataga is a part of me, I live it daily. My love for the beauty of nature is great enough to endure the many hardships of living in remote Alaska. Few environmentalists can say that! I will stay here as long as I am strong enough to take it and then I will quit like so many others. Why? Because no few individuals can settle these vast Alaskan regions by themselves. We must develop, grow and settle; it is unrealistic to think any other way. We can no longer just live off of the land by trapping or mining. We must develop our other natural resources to give us jobs and provide a living to those who want to live where they choose. One industry will open the door to others. If it is the oil industry in the Gulf, so be it. Yes, I am honest enough to say my income comes from the oil industry as does millions of other American. The oil industry is the largest and the most powerful industry in these United States, who could be more capable of developing the Gulf of Alaska? We Americans must relie on our own country, our own technology to develop this much needed source of energy. We must start developing it right now while there is still time to do it carefully and properly.

When I first came to Cape Yakataga the very thought of an oil well within a thousand miles made me ill. Since then I've seen the oil companies in action here, I've talked with their geologists, I've talked with their crews, I've studied and read to educate myself on whats going on in the oil industry. I have seen the time and money spent by the oil companie to make sure that things go right. I have faith that they will not destroy my beautiful Cape Yakataga home.

Sincerely,

Betty Varney

written only

# ALASKA AERONAUTICAL INDUSTRIES, INC.

ALASKA'S COMMUTER AIRLINE

C FICATED ALL WEATHER
AIR TAXI & CHARTER SERVICE

GENERAL OFFICES
Airport Annex - Box 6067
Anchorage, Alaska 99502
Phone (907) - 277-6882

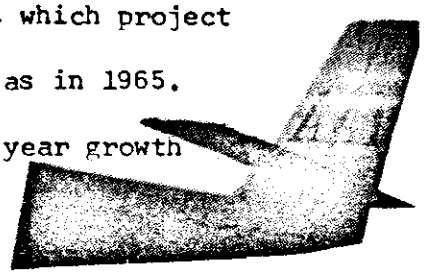
Good morning, Gentlemen. My name is Douglas Haynes of Alaska Aeronautical Industries, Inc. AAI is a small scheduled airline serving the Cook Inlet basin area. The oil industry is, perhaps, the major user of our service.

We do not serve the area from Seward to Yakutat, however, the coastal communities expected to receive the greatest amount of activity from future exploration and development in the northern Gulf of Alaska. I point out the connection because the AAI operation would be considerably smaller without the revenue from the oil industry and it is very unlikely that some of the points we serve would have scheduled service were it not for that revenue base.

Now the air taxi operators in Alaska are, for the most part, doing a fine job and I don't want to sound like I am criticizing them. But their operating costs are high and, consequently, travel in those parts of Alaska where there is no scheduled air carrier can be a problem and is certainly relatively expensive. So a lot of our customers are benefiting from the oil industry activity here, whether they realize it or not.

I am sure the same situation will be the case, if and when oil production and development comes in the Gulf Coast area. Cordova, Valdez and Yakutat have scheduled service now, of course. But increased competition and frequency of flights is almost inevitable.

Now I would also like to comment on the national aspect of this situation. I have recently been shown figures of the U. S. Bureau of Mines which project the U. S. will be using at least twince as much energy in 2000 as in 1965. That low estimate is based on a very conservative 2 per cent a year growth rate.



At four per cent the demand would be the energy equivalent of about 40 billion barrels of oil per year in 2000.*

While other energy sources will certainly meet a large share of that future demand, there will obviously be need for large amounts of oil and gas for fuel, lubricants and petrochemicals. With other countries showing a natural concern about preserving sufficient reserves to meet their long term requirements, the United States can't rely on those sources. Domestic reserves must be found.

That means starting exploration of Outer Continental Shelf areas, such as the Fulf of Alaska, as soon as possible. It must be kept in mind that intensive exploration under the waters of the Gulf of Mexico began some 25 years ago. That area appears to be just now peaking in oil and gas production.

Thank you, Mr. Chairman.

# # #

*BOM Data Source: An Energy Model for the United States, Distributed by National Technical Information Service

THE CITY WITH A FUTURE
THE VILLAGE WITH A PAST

OFFICE IN THE BENCO BUILDING
PHONE 283-7989

P.O. BOX 497
KENAI, ALASKA 99611
OIL CAPITOL OF ALASKA

# RESOLUTION OF

# GREATER KENAI CHAMBER OF COMMERCE

WHEREAS the entire OCS leasing program is part of a national plan to increase oil and gas production and reduce reliance on foreign energy sources as soon as possible, and

WHEREAS consideration is being given by the Bureau of Land Management to proceed with leasing of OCS tracts in the Gulf of Alaska, and

WHEREAS the City of Kenai has had the unique experience of being a beneficiary of major onshore petroleum development in the State of Alaska, and

WHEREAS the impact of that development has been beneficial in improving property tax valuation in both petroleum and non-petroleum oriented properties, and

WHEREAS this increased valuation has permitted our City to grow and provide all the services we enjoy today, and

WHEREAS this growth has occurred without significant detriment to our environment, and

WHEREAS we have previously submitted testimony before the Council of Environmental Quality Hearings on "Outer Continental Shelf and Gulf of Alaska Exploration & Development" in Anchorage, Alaska, on September 27, 1973 (copy of that testimony attached hereto as part of this resolution), and

NOW, THEREFORE, be it resolved that the Board of Directors of the Greater Kenai Chamber of Commerce supports prompt leasing of the OCS tracts in the Gulf of Alaska by the Bureau of Land Management, and urges the Federal Government to do everything possible to expedite rapid exploration of and early production of any oil and gas that may be found on the offshore lands leased.

PASSED AND APPROVED THIS FIRST DAY OF AUGUST, 1975

G. E. Day, President
Greater Kenai Chamber of Commerce

KENAI CHAMBER OF COMMERCE

TESTIMONY OF

OSCAR L. THOMAS, DIRECTOR

BEFORE THE

COUNCIL OF ENVIRONMENTAL QUALITY

HEARINGS ON

OUTER CONTINENTAL SHELF AND GULF OF ALASKA EXPLORATION AND DEVELOPMENT

ANCHORAGE, ALASKA

SEPTEMBER 27, 1973

My name is Oscar L. Thomas. I am a Director and past President of the Kenai Chamber of Commerce. I am also Vice President and General Manager of Kenai Utility Service Corporation, a natural gas distribution company operating in Kenai Alaska. I appear today on behalf of the Kenai Chamber of Commerce and its President, Mr. Richard Stetler.

The Council has indicated a desire for information on specific topics in its consideration of the advisability of oil and gas exploration and development in the Gulf of Alaska. Of these, "Potential Effects of Onshore Development" is the issue to which we will speak today. We are, perhaps, uniquely qualified to testify on this matter. To date we are the only Alaskan community to have experienced the impact of major onshore petroleum development. The City of Kenai lies geographically in the midst of Alaskas' only currently productive reserves, exclusive of Pt. Barrow with its minimal amounts of natural gas production. To our immediate south lies the Kalifonski Gas Field supplying natural gas for domestic consumption to the Kenai Peninsula and the City of Anchorage, as well as far larger quantities of gas to two huge processing plants which convert the commodity for export. Contiguous to our easterly city limits we have the Beaver Creek Field which has recently become productive of oil, and where we understand continuing development is taking place. To our north and northeast we have the Swanson River Field, another onshore development that gave the industry its beginnings here in ~~1959.~~ 1957. Further north and northwest the fourteen Cook Inlet offshore platforms pump the production from several hundred wells to onshore sites for processing and shipment. These sites are located just a few miles from downtown Kenai. They include the Collier-Carbon and Chemical Plant, Phillips Petroleum Gas Liquification Plant, Standard Oil Refinery and Tesoro Refinery. We feel that the experience of our community in its relationship with the development outlined herein should establish our credentials to address ourselves to the subject at hand.

In sharing with the Council our interpretations of what has actually occurred on the Kenai Peninsula as a result of petrochemical activities, we will touch mainly on the socio-economic results and environmental impact of these activities.

The Kenai Peninsula Borough was formed in ~~1965~~ 1964, about the same time that the oil and gas activities began to emerge as a major development. In comparing our economic picture at that time to our present outlook the difference is, broadly stated, as the difference between night and day. Through the courtesy of the Kenai Borough Assessor's office we have compiled the following statistics:

1. Total 1965 Real and Property Tax Valuation-$95,000,000.00. Of this amount, approximately $30,000,000.00 was directly related to oil and gas properties. These properties would include pipelines, refineries, processing plants, oil and gas fields, service company holdings and other petroleum-oriented properties. It is seen, then, that exclusive of the industry, the total Borough Tax valuation was $65,000,000.00

2. Total 1973 Real and Property Tax valuation-$575,000,000.00. Of this amount, approximately $405,000,000.00 is related to oil and gas properties as defined above. We have then, a 1350% increase in petroleum properties and a 290% increase in other properties for the eight-year period.

3. In 1965 the Borough Tax Levy was at five mills. After eight years of spiraling inflation, eight years of constant expansion in the scope of Borough services to the people, our 1973 tax rate is - the same five mills. We wonder how other Alaskan communities have fared in this respect in this time period.

Along with this favorable tax position, which accrues to the benefit of all of us, there are other important considerations. In 1965 the City of Kenai was, quite frankly, a rather dreary little hamlet with a population of about 700. Among the social necessities that were either limited, sub-standard or non-existent were schools, fire and police protection, shopping facilities, churches, public works, hospital and other medical and dental facilities, housing, recreational facilities and year around employment opportunities. Here again, we see a dramatic change. Within the City of Kenai three new schools have been constructed; elementary, junior high and vocational training. Fully staffed and equipped fire and police departments are housed in a public safety building completed last year. A million dollar shopping mall, complete with super market, department store and a variety of consumer product and service shops, now sits in the center of Kenai alongside a five lane highway completed in 1972. The number of our churches has tripled. Water and sewer utilities have been and are continuing to be, installed throughout the city as well as a

natural gas distribution system. A sophisticated sewage treatment plant went into operation earlier this year, protecting Cook Inlet waters from the pollution of our domestic effluents. A well equipped medical center continues to expand as do dental facilities and related services. A wide variety of modern homes and apartments is now available in well kept subdivisions.. Municipal parks, a racetrack, rifle range and other recreational needs are being provided or planned for. In neighboring Soldotna, eleven miles distant from us, a fine new hospital has been built along with a new community college as well as a modern office complex housing the Borough administration offices and those of our school district. Lastly, a serious, qualified job seeker is much more apt to find full time employment then he would have been in the days when seasonal salmon fishing was the only industry sustaining the community.

Gentlemen, we submit that all of these things have come to us solely as a result of onshore development on the Kenai Peninsula. They have come to us in an orderly, well thought out progression of events that have posed no serious problems with respect to either the social or ecological environment. As social needs have been expanded, so has the industry given to the community the affluency to meet them. As our awareness of the increasing need to protect our ecology becomes more and more acute, so does the industry respond with planning, technological advancements and a genuine will to provide the all important development of our resources while maintaining a good balance with nature. Dating back to the previously mentioned Swanson River discovery in 1959 we are aware of no significant damage to our air, our land or our waters that are attributable to petroleum industries. Had there been, and surely there may someday be, such damage there is a fitting perspective to consider. Our world population continues to increase at an almost unbelievable pace. There are tremendous demands being placed on the development of our natural resources. If there is a price to pay for such development let us recognize it. Let us make every effort at our disposal to minimize it. Then, let us proceed to do what we all know must be done.

In a very selfish sense we on the Kenai, are very sensitive to a certain environment-related potentiality. As local residents, and most assuredly the Anchorage population must be included here, we see our natural gas reserves being snapped up by outside markets more rapidly than they are developed. Alternative energy sources are not palatable to us. Winter temperatures in the area often drop to minus forty degrees fahrenheit and thermal inversion layers in our air are common. The combustion products of coal and oil, when used as heating fuels, can combine with automotive exhaust emissions and be trapped under such circumstances, polluting our air to a degree of extreme hazard to human well being. Our neighbors in Fairbanks can well testify to this. The development of petroleum resources in the Gulf of Alaska would tend to relieve the pressures on our local gas reserves, insuring us a continuing supply of natural gas for our own relatively small but ever increasing needs.

In summary, we have tried to illustrate that the onshore development of petroleum resources on our peninsula has provided us with widely varied benefits which far outweigh any negative factors. We do not advocate, nor would we stand for, the rape of our ecology. Most of us live here by choice and consider this land as ours. We intend to protect it. We have seen the performance of the petroleum industry over a span of years and are satisfied with that performance. We consider ourselves fortunate to have the industry active in our midst. We see no reason why the experience in our area with onshore development cannot be duplicated anywhere in Alaska, or for that matter, in the world.

The Kenai Chamber of Commerce appreciates very much the opportunity to appear before this Council. We respectfully submit that the Council on Environmental Quality should recommend to the President of the United States that petroleum exploration in the Gulf of Alaska should proceed as soon as possible.

written only

STATEMENT OF R. DEAN ALLEN PREPARED FOR PUBLIC HEARING ON THE PROPOSED LEASE SALE (#39) OF OIL AND GAS ON THE OUTER CONTINENTAL SHELF - IN THE GULF OF ALASKA AUGUST 12, 1975, ANCHORAGE, ALASKA.

My name is R. Dean Allen. I have lived in Alaska for almost ten years. I am a former manager of petroleum engineering in Alaska for a major oil company. Since 1969, I have been an entrepeneur involved in supplying food & housekeeping and operations & maintenance services to the petroleum industry in Cook Inlet and at Prudhoe Bay. These service copmanies are frequently allied with Alaskan Native corporations created under the Land Claims Settlement Act. Our work force of almost 100 is predominantly Alaskan.

With a background such as mine it must come as no surprise that I favor OCS leasing in the Gulf of Alaska, and at the earliest date possible. My 23 years in the petroleum industry has in large part been centered around exploration and development projects. I am keenly aware of the time lag from lease sale to fully developed oil production. Exploration cycle time almost always exceeds five years and usually is closer to ten years. At a time when our Nation's developed oil supply is not meeting critical energy demands, it makes a great deal of sense to open up exploration to those vast unexplored areas beneath the sea.

I have followed ocean technological advancements since my first exposure to offshore development in the mid-fifties. The techniques and procedures for safe offshore exploration and production of petroleum are already largely developed. The vast majority of work done offshore has resulted in no disasters of any kind. The few accidents that have occured have resulted in little permanent damage to the enviroment. I have confidence the industry is ready for the Gulf of Alaska.

The positive impact of oil industry efforts in the Gulf of Alaska should follow a well traveled path of industry involvement in the communities with which they come in contact. Individuals directly employed by the industry receive incomes substantially above average in the State. A large share of the incomes is spent on goods and services within Alaskan communities creating secondary effects of increased employement and incomes in support industries. Taxes on increased personal incomes are revenues to the State. Onshore facilities are tax bases for tax-empowered entities - borough or city. These taxes are used in providing community health and social services and public facilities, often times where none may ever exist without the revenues from oil. The petroleum industry has consistently supported local charities, educational institutions and community hospitals. They provide leaders of proven capability who voluntaryily spend many hours and contribute many thousands of dollars every year to community projects.

As a supplier of labor and other services in Alaska I can make the following observations from experience. The opportunites for local employment on a long term basis occur mainly with production activity. The producing platforms require a permanent work force of mechanics, electricians, production operators, crane operators, welders, cooks and an assortment of unskilled helpers. These positions are usually given to qualified locally-based personnel on a preference basis. Training for some of the jobs is afforded by the contractor or by the oil company. Other jobs require skills common to serveral industries which may be locally available, but under-utilized by the communities. Commonly, work schedules are such as to provide ample time to participate in personal pursuits currently being enjoyed by the local work force. Most production employees on remote Alaskan oil operations work one week on and one week off.

For those employees not hired locally, the oil companies have provided long distance rotation from more populated areas, such as Anchorage and Fairbanks. Thus,

although, undoubtedly some permanent influx may be expected into coastal communities, this impact is not as great as might be expected. Prudhoe Bay, for example, has only a handful of "permanent" residents. The rest are rotated from communities as close as Barrow and as far away as Anchorage. Where facilities are needed to house and feed workers, temporary camps are erected which have their own sewers, water and utilities, thus limiting to some extent the impact of even the temporary surge of workers on the local community. Transportation and communication facilities initially are usually overtaxed when the industry activity concentrates in a locale, but these systems are quickly expanded leaving in the wake of activity a much improved condition for those remaining to enjoy the life style they choose.

It is my intention to offer our companies' capabilities in support of the petroleum industry's efforts in the Gulf of Alaska, and it is my plan to include the people of affected areas in the opportunity. This will consist of the offer of jobs to local residents and joint venture efforts with the Native village and regional corporations where feasible. We pledge to assist local communities in planning for and coping with the impacts of such oil activity in their area, if they wish our help.

written only

ANCHORAGE, ALASKA August 12, 1975

STATEMENT OF RAYMOND I. PETERSEN, PRESIDENT, WIEN AIR ALASKA, INC. BEFORE THE U. S. DEPARTMENT OF INTERIOR, BUREAU OF LAND MANAGEMENT, HEARING ON PROPOSED OIL AND GAS LEASING ON THE OUTER CONTINENTAL SHELF, NORTHERN GULF OF ALASKA.

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Although Wien can expect little direct benefit from Northeastern Gulf of Alaska oil activity, a socioeconomic study made by Mathematical Sciences Northwest, Inc. for the oil industry indicates a major development there would have the greatest population impact in Anchorage where Wien operates. The Anchorage area population would increase by several thousand, while coastal communities would receive only a few hundred new residents, the study concluded.

Every business in Alaska, including Wien, now doing business with the oil industry must plan future growth and capital investment on the assumption there will be a continuing and orderly program of exploration and development in Alaska by the industry. To unduly delay the Gulf of Alaska activity will disrupt this orderly expansion and could lead to over-investment which would probably be economically disastrous for some small companies.

The air transportation industry is a large oil consumer and many Alaskans are nearly totally dependent on air carriers for their needs. Should another international crisis lead to an acute fuel shortage in the future, Alaska might have trouble getting the fuel it needs if the rest of the nation felt that Alaskan oil reserves were being held by selfish interests.

The main arguments against the development in the gulf is that pollution will damage and perhaps destroy the fisheries, that the way of life in coastal communities will be destroyed, that shoreside facilities will be a cost burden to the State for which it will receive no benefits, and that a state coastal zone management [illegible]

is necessary to permit better state control of the activity. In my opinion there is no scientific evidence anywhere in the world, including Cook Inlet, to support the first. Anyone who has visited Alaska villages on a recurring basis should know that the "way of life" is undergoing constant evolution and the Native Claims Settlement is having a far greater impact than any single commercial activity could.

When I came to Alaska in 1934 there was an estimated 30,000 Eskimos, Indians and Aleuts in the territory. The balance of the total 60,000 population were Caucasian and other. Today I understand there are 75,000 natives and the population is increasing rapidly due to improved health services in recent years. The life style of these people today is a far cry from their igloo dwelling subsistence living style of their parents and grandparents. The old fish-burner powered transporation and seal oil lamp heating has been replaced by petroleum products. There is no turning back!

The Air Transport Association has recently released figures showing the scheduled airline industry incurs costs of $1.4 million per day for each cent that the price of fuel increases. In the case of my company, Wien Air Alaska, a one cent increase at present consumption costs the airline a quarter of a million dollars a year. Total increase in Wien's costs for the year 1975 over '74, will be close to $4 million.

The point I am trying to make is the necessity to find vast quantities of oil within andoffshore of the United States of America. Only with an adequate supply of petroleum can the market system really work. The oil companies are highly competitive and given

the opportunity through exploration can and will reduce the price of petroleum products, or at the very least hold it under inflationary conditions.

As for the third argument, any shoreside facilities are subject to state taxation and it will be the responsibility of the Department of Revenue to see that actual costs are recovered by that means. Finally, state officials, have stated that state laws now exist to achieve adequate control over any coastal activities. A coastal zone management law would simply streamline the administration and, theoretically, give the State some say-so over the activities of federal agencies. Emphasis should be put on the word "theoretical", however. Those same agencies would have to first approve any state CZM plan calling for this exercise of state authority.

I wish to conclude by urging oil exploration in all areas under the U. S. flag as expeditiously as possible, taking into proper account environmental necessities.

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letter only

**Tenneco Oil**
A Tenneco Company

Tenneco Building
P.O. Box 2511
Houston, Texas 77001
(713) 229-2131

August 12, 1975

Mr. Edward Hoffman, Manager
Alaska Outer Continental Shelf Office
Bureau of Land Management
P. O. Box 1159
Anchorage, AK 99501

Re: Public Hearing - Draft Environmental Impact Statement
Gulf of Alaska - Proposed OCS Lease Sale No. 39

Dear Mr. Hoffman:

Reference is made to the public hearing which you are holding in Anchorage August 12 and 13, concerning the environmental impact which a possible sale of oil and gas leases on the Outer Continental Shelf of the Northern Gulf of Alaska might have upon the adjoining land, the people of the great State of Alaska and this nation as a whole.

Tenneco Oil Company feels this sale and others that have been proposed in the frontier areas of the Outer Continental Shelf should be held. We know of no other domestic region within this industry's reach that offers the reserve potential to solve this nation's immediate and critical energy shortage. Given the opportunity by making leases available, with reasonable incentives and minimum restraints, the petroleum industry can and will, safely, explore for these potential reserves.

For me to offer further testimony in support of the foregoing statements, it would only be a redundancy to the testimony you will hear and witness today as will be presented by the Gulf of Alaska Operators Committee. Tenneco Oil Company is a participating member of this committee and fully endorses the testimony which they will present to your panel today.

In the interest of conserving the panel's time, we respectfully ask that our statements and endorsement of the Gulf of Alaska Operators Committee's testimony be entered into your record of these proceedings.

Yours very truly,

Jack Morris

Jack Morris
Land Manager-Frontier Projects
North America

JM:pb

writer only

POLAR AIRWAYS, INC.
2600 EAST FIFTH AVENUE
ANCHORAGE, ALASKA 99501
PHONE 279-5535

STATEMENT REGARDING OUTER CONTINENTAL SHELF LEASING

Thank you, Mr. Chairman.

I am Dr. Royce Morgan, President of Polar Airways, Inc., a Certificated Scheduled Air Carrier operating in this state. I endorse the Interior Department's plan for accelerated OCS leasing that would permit a sale in the Northeast Gulf of Alaska late this year.

I find several good reasons for proceeding. There are several in the Aviation business who have applied for operating rights at Yakutat who believe that revenue would come to their busi - nesses by serving the oil industry there.

The future of Polar Airways is predicated to a great extent on continued economic development by the oil industry. But so is the entire state of Alaska's future to a large extent. It is estimated that a majority of Alaska's revenue in the near future will be derived from the oil industry.

In the first chapter of the first book of the Bible, " God said, ' Be fruitful, and multiply, and replenish the earth, and subdue it' ". I believe orderly development of our natural resources is in line with God's plan for man and the earth. I would hope that development of the petroleum resources in the Gulf of Alaska is part of that orderly sequence of activity.

Thank you, Mr. Chairman.

Royce H. Morgan

Royce H. Morgan M.D.
President
POLAR AIRWAYS, INC.

S C Sandusky
Manager Anchorage Division
Production US & Canada

ALASKA OCS OFFICE
ANCHORAGE, ALASKA

Marathon Oil Company

P.O Box 2380
Anchorage, Alaska 99510
Telephone 907/274 1511



August 22, 1975

Director (732)
Bureau of Land Management
Washington, D.C. 20240

Dear Sir:

Proposed OCS Lease Sale #39, Gulf of Alaska

Marathon Oil Company wishes to add its support to the testimony presented by the petroleum industry through the Gulf of Alaska Operators Committee at the hearing held in Anchorage August 12 and 13 concerning the Draft Environmental Impact Statement for the referenced sale.

In addition, we believe the testimony of Mr. R. W. Bybee and others, with regard to delay of the sale, deserves special attention. Advocates of such delay state they need time for social-economic impact planning. We concur with Mr. Bybee's judgment that many of the essential ingredients of the final planning process are now imponderables (e.g., number of fields and their location, number and location of pipelines, nature and location of required auxiliary facilities, number of people needed in the operation, and the time schedule) and that hard data concerning these items will become available progressively during the long lead time between a sale and production. We believe that anticipatory planning can and should go forward so that when real data are available, implementation will be orderly, but that delay will serve no useful purpose.

There are also some who cite the need for baseline studies as reasons for delay. We do not believe that such studies will supply information that would affect the decision making process except, perhaps, to support a sale. For example, it is generally recognized that the Gulf is or borders a substantial fishery. Knowing the exact magnitude of that fishery in terms of fish counts and so forth would not materially add to hard data based on historical catches nor to the resulting need for enlightened regulations governing

operations. On the other hand, if the baseline studies found limited fishing or negligible habitat in or adjacent to the sale area, leasing should proceed and the delay would have been for nought. However, we do believe that data-gathering opportunities provided by the long lead time will assist in developing the necessary regulations and operational plans and techniques to protect the environmental conditions actually found to exist.

Accordingly, Marathon urges that the sale be held as scheduled.

Yours very truly,

S. C. Sandusky

# Alaska State Legislature

SENATOR
ROBERT H. ZIEGLER, SR.
P. O. BOX 979
KETCHIKAN, ALASKA 99901

POUCH V
JUNEAU, ALASKA 99811



CHAIRMAN
JUDICIARY

MEMBER
COMMERCE
LEGISLATIVE COUNCIL

Senate



August 21, 1975

Director (732)
Bureau of Land Management
Department of the Interior
Washington, D. C. 20240

Re: Proposed Lease Sale (#39)
Outer Continental Shelf/Gulf of Alaska

Dear Sir:

My name is Robert H. Ziegler, Sr. I am a partner in the law firm of Ziegler, Ziegler and Cloudy in Ketchikan, Alaska, past president of the Alaska Bar Association and an 11-year member of the Alaska State Senate, representing District A. I would like to submit the following to you in support of the captioned lease sale.

Beyond a doubt, the national energy situation is grave and will probably get worse before it gets better. Out national efforts to develop alternate energy sources should be redoutled. Even so, there will be a continuing need over a number of years to rely on fossil fuels to stay even, much less gain. Much of our fuel requirements must still be met by oil and gas which, as I understand it, will be found largely in the offshore areas. I therefore urge that the proposed oil and gas lease sale in the Gulf of Alaska be held.

From news accounts, I gather that in the hearings held August 12th and 13th ofthis year in Anchorage, the major point of disagreement was not whether or not the sale should be held, but, rather, when the sale would be held. My views on this matter are reflected by the lead editorial published in the Anchorage Daily Times on August 7, 1975, a copy of which is attached for the record.

Those who doubt the oil industry's ability to operate safely in the Gulf of Alaska are, I believe, a shrinking minority. However, from news accounts available to me, representatives of that minority appeared at your hearings. The view I hold on that matter is reflected well in another Anchorage Times editorial. This editorial, published on August 14th, is also attached for the record.

Another concern growing out of your hearings is the matter of lifestyles in Alaska. Rather than detail my thoughts on that subject, I will endorse the article by Max Brewer, printed in the Anchorage Times on August 3, 1975. A copy of that article is attached for the record.

I do have one reservation about the timing of the lease sale in the Gulf. As a Senator in Alaska, I am well aware of the state's need for revenues. Our annual budget is now in the $600 million range. Half of this will come from the oil industry. It is my firm conviction that most taxpayers in Alaska--including the oil industry--should not be burdened with additional taxation. Therefore, the financial assistance needed by the State of Alaska and its coastal communities to cope with the initial impact of oil and gas development in the Gulf of Alaska should be met by the Federal government. An equitable revenue sharing system should be enacted by Congress to provide such funds.

While revenue sharing is needed in Alaska, the national need for additional oil and gas supplies is greater and, therefore, I support the lease sale in the Gulf without qualification. At the same time, it cannot be emphasized too strongly that to proceed without a revenue sharing plan would be unfair to Alaskans.

I urge both revenue sharing and the lease sale--in that order.

Thank you for allowing me to make this statement for the record.

Very truly yours,

Robert H. Ziegler, Sr.

RHZ/pkz

enc.

EDITORIAL PAGE

Anchorage Daily Times

ROBERT B. ATWOOD
Editor and Publisher

WILLIAM J. TOBIN
Associate Editor
And General Manager

CLINTON T. ANDREWS JR.
Managing Editor



## Drilling In The Gulf

# PLENTY OF KNOW-HOW

**IMPRESSIVE** technical and scientific data supports the oil industry's argument that petroleum exploration and development can safely take place on the Outer Continental Shelf in the Gulf of Alaska.

Against this array of information, only fuzzy and vague allegations expressing a fear that the job cannot be done have been offered to counter federal plans to stage an offshore lease sale in December.

The different viewpoints were expressed here this week in testimony before an Interior Department panel soliciting comment on a draft environmental impact statement on OCS operations.

By any fair assessment, the pro-development forces were by far more informed, prepared and backgrounded than were those who spoke in favor of delaying the lease program.

**THE OIL** industry was represented at the hearing by a contingent of experts who have been busy for years with all sorts of studies relating to development off the Alaska coast. Working under a jointly sponsored project known as the Gulf of Alaska Operators Committee, the industry has assembled some of the best technical experts in the world to determine what the risks and potential might be.

Nothing in the findings, said Howard Slack of Atlantic Richfield, "would preclude operations" in the Gulf.

John H. Silcox of Standard Oil of California pointed out there has been "a mass of documented data," some of which has been grossly ignored by those who conjure up visions of environmental destruction.

Yet in the face of this testimony and the back-up data, state officials denied that proper biological and technical research has been done and said it would have to be done after the leasing.

Furthermore, the state contended that it was caught by surprise when a lease sale was announced -- as though hit by a bolt from the blue.

**THE FACT** is that it has been known for years that a Gulf of Alaska lease sale would be forthcoming.

That's why the industry formed the Gulf of Alaska Operators Committee some years ago, and that's why all of this biological and technical data is in hand — even if the state would like to pretend it doesn't exist.

It's true, unfortunately, that the state may not be prepared. But is not true to suggest that the industry has been deficient. It hasn't.

Instead, it has the technical know-how and ability to proceed.

If Outer Continental Shelf development is blocked it [illegible] for political reasons, not technical ones. And to contend otherwise simply doesn't match up with the facts.

August 3, 1975, Anchorage Sunday Times

# Preservation of Lifestyles

By Max Brewer

RECENTLY there has been much discussion about the subjects of the quality of life and of the preservation of lifestyles in Alaska. A basic assumption appears to be that the preservation of the existing Alaskan lifestyle is desirable and that it should be maintained at all costs. Indirectly, the assumption seems to be that the existing quality of life, if not quite as desirable as it was 20 years ago, is good and that it is what most of the people want.

THE QUALITY of life is an illusive and ill-defined phrase generally meaning something different to each beholder. The discussions of the subject are carried out by restricted groups talking to like-minded individuals. There generally is little public involvement in the discussions other than reading about them in the news media.

Because they are complex, could be controversial, or might cloud the issue, the questions of whose quality of life and whose lifestyles might be affected are rarely discussed in detail.

IT IS ONLY human nature for those whose lifestyles already are confortable or enjoyable and whose jobs are secure, to want to preserve the status quo. It also is natural that they might fear change or to fear that any change would automatically be bad. Paradoxically, these fears do not fit with the pioneering

remote people exist throughout Alaska, although the strengths of their situation can best be realized through observations made in a native community over a period of time.

IT IS discouraging to know of schools that have been constructed but for which there is no money for school books even two and three years later. It is disheartening to know of schools not having money for hot lunch programs, when these lunches are counted on to build up the youngsters physical condition during the winter months. It is even worse to know that many of the youngsters, even the little ones, hadn't had breakfast and were too hungry to study.

An uncomfortable feeling also is conjured up knowing that some schools have unheated bathrooms; some even have no bathrooms and youngsters use the willows. Sometimes that can be difficult when there are no willows as can be the case in western and northern Alaska.

In any event the experience is far more exhilarating, if not numbing, at 50 below with a sharp breeze, than the vacationer experiences during the summer when all he has to worry about is having a can of insect repellent to keep away the mosquitoes and biting flies.

A SHOCKING experience can be had when a doctor comes begging for penicillin

While water usage of over about 100 gallons per day, in the absence of industrial uses, usually indicates an inadequate or inefficient system, usage of under 50 gallons per day per person not only indicates an inadequate system but also a health hazard.

Disposal of untreated sewage to the waters of the state and more particularly the land surfaces of the state poses rather obvious health hazards. It also causes deterioration of the environment, particularly where populations are concentrated and especially in areas where permafrost is a problem.

Such deterioration will continue and will grow until communities and the state not only have the money to construct the required facilities but, even more importantly, the money to operate the facilities once they are constructed. Unfortunately such funding is nowhere in sight, even after completion of the pipeline.

THE QUALITY of remote housing in much of Alaska is grossly inadequate for even reasonably healthful conditions to prevail. Unfortunately, the housing is usually designed for maximum consumption of very expensive energy. This occurs even though we know how to build, with no increase in cost, for much better energy conservation, while at the same time providing additional comfort.

It does not engender confidence to hear young natives complain about our construction of "instant slums" and "drafty and leaky crackerboxes". It doesn't even give an impression that they have any confidence that people know what they are talking about when they talk about the quality of life.

It does, however, help explain some of their frustrations and their desire to

THE NEED FOR these compromises, or the consequences of no compromises, is not being discussed today. Perhaps we also need to discuss the quality of survival life. Perhaps we need to really discuss which lifestyles we wish to preserve, wherever possible, and which lifestyles that we want to change for the better as soon as possible.

Whatever we do, let us look at the whole picture of the quality of life and not kid ourselves. We might even consider holding our quality of life conferences at Bethel, in winter, and at Barrow, during the summer.

*Max Brewer, trained as a scientist, is former commissioner of environmental conservation. He is now living in Juneau and is a consultant on environmental and Arctic problems.*

EDITORIAL PAGE

Anchorage Daily Times

ROBERT B. ATWOOD
Editor and Publisher

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Associate Editor
And General Manager

CLINTON T. ANDREWS JR.
Managing Editor



# OCS Hearings

# ONE-SIDED TESTIMONY

A CURIOUS double standard is demonstrated by officials of Alaska who tell a group of visiting congressmen that the state doesn't want offshore oil development now, and may file suit in an effort to block a Gulf of Alaska lease sale if the federal government proceeds with plans to put undersea acreage up for lease.

The biggest gun on hand to shoot down federal offshore planning, during the course of a hearing Tuesday at Yakutat, was Gov. Jay Hammond.

His opposition to leasing on the Outer Continental Shelf represented the official administration position. But it is safe to say that he did not speak for all Alaskans when he argued for at least a two-year delay in the lease offering now scheduled for in December.

Instead, he voiced an administrative philosophy which puts environmental considerations above all others and which reflects an attitude that growth is bad, no-growth is good.

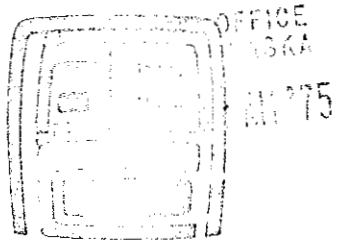
THE GOVERNOR, of course, has a legitimate interest in seeing that environmental considerations studies, preliminary seismic work and other assignments be carried out without some advance preparation?

THE MAYOR of Yakutat, Larry Powell, complained to the committee that his town isn't prepared for this sort of thing. It has no zoning ordinances, he said.

Surely he doesn't want the oil industry to be responsible for local ordinances. For several years it has been obvious that Yakutat would be a center of activities should federal leases be sold offshore. The town has had ample time to be looking into zoning and other matters that are the obligation of any community, with outside assistance available when it is needed.

It's no criticism of a town of 540 people to say that it lacks the governmental sophistication of a major metropolitan area or that it may lack the skills necessary to cope completely with demands that will arise in connection with sudden industrial growth.

But the state administration has such skills and it should lend a positive hand in a case such as this.



ALASKA
BANK OF COMMERCE

MAIN OFFICE: POUCH 7012, ANCHORAGE, ALASKA 99510 • FORMERLY MATANUSKA VALLEY BANK

August 25, 1975

Director 732
Bureau of Land Management
Washington, D.C. 20240

Subject: Proposed Lease Sale #39
Gulf of Alaska

My name is Albert Swalling, a 45-year resident of the State of Alaska. Address: 2601 Marston Drive, Anchorage, Alaska 99503. I welcome the opportunity to present my views on the proposed sale referenced above.

I hold no claim to fame or expertise as a gas or oil specialist. However, so that you may better evaluate my views, the following is a list of some of the exposure I have had in energy and environmental fields:

Chairman: "North Commission", a study group created by the Alaska Legislature to study, promote, and develop the human and physical resources of Northern Alaska, 1967-1971.

Member: Alaska International Rail & Highway Commission, 1958-1960.

Chairman: Environmental Committee, Alaska Chapter-Associated General Contractors of America, 1972.

Chairman: Environmental Committee, Associated General Contractors of America, Washington, D.C.

Chairman: Energy Crisis Committee, Alaska Chapter-Associated General Contractors of America, 1973.

Member: Fuel and Energy Committee, Associated General Contractors of America, Washington, D.C., 1973-1974.

Member: Fuel and Material Shortage Committee, Associated General Contractors of America, Washington, D.C., 1974-Present.

Member: Governor's Pipeline Commission, State of Alaska, 1970-1971.

Member: Board of Directors, Alaska Pipeline Company, 1963-1972.

Member: Board of Director, Anchorage Natural Gas Company, 1960-1972.

Member: Board of Directors, Alaska Interstate Company, 1968-1972.

President and Chairman: Suntrana Mining Company, Healy, Alaska (Coal), 1953-1966.

President: Swalling Construction Company (Heavy, Marine and Industrial Contractor), 1947-Present.

President: Alaska Bank of Commerce, 1967-1975.

Chairman: Alaska Bank of Commerce, 1967-Present.

Since the announcement of the proposed lease there has been a very active program by the state administration and environmental groups to postpone the sale on the basis that additional time is needed for proper planning so as to lessen the impact on the affected communities. I believe some of these people are sincere, but for the most it is a repeat performance of unending delay tactics.

The sale must be held in order that the search may begin. There is no assurance that either oil or gas in economic quanities will be discovered. The actual initial prospecting will have very little impact on the State as a whole or the particular communities involved.

In a national energy crisis, such as we are now experiencing, an inventory must be taken of our known reserves, and the only sure method of proving a reserve is to drill for it.

Many words have been spoken and printed to the effect that we need more time to plan and prepare for the activity in the gulf. Among the several items mentioned are housing, utilities, staging areas, schools, and motel and hotel accommodations. It is obvious to me that unless the field or fields are discovered we will have no need for these facilities. You show me the mortgage loan officer that would finance, say, 200 living units in Yakatat at this stage, and I'll point to the man heading for early retirement or the school board asking for funds for 20 class rooms on the strength of an unknown, maybe need.

Another item mentioned in opposition to the gulf sale is that when Alyeska comes on full stream there will be a surplus of product on the West Coast and will result in a depressed market, thereby seriously effecting the monetary return to both the federal and state from a royalty standpoint. At this point in time the State has no royalty claim to O.C.S., but it is argued that it could effect the market for Prudhoe and Cook Inlet production. My best information is that this problem has been anticipated and is well on the way of being solved.

My conclusion is that the sale should proceed, exploration should be expedited, the field or fields inventoried, and when this has been accomplished and the need established, the necessary facilities can be provided by both the private and the public sector within their areas of normal responsibility.

A. C. Swalling
Chairman of the Board

to support a positive decision by the Department of the Interior to conduct this sale.

OCS Importance

The impact of the Arab embargo led to the development of a widely held view that this nation must regain a reasonable level of energy self-sufficiency. We currently import 6 million barrels per day of crude oil and petroleum products and the figure is steadily rising. Our dependence on imports adversely affects the nation's security and economic stability. We are no longer assured an adequate supply of fuels for national defense and our foreign policy is undoubtedly weakened by the threat of an embargo that can cripple our industries and seriously affect our life style. Aside from the uncertainty of supply, costs of large volumes of imported oil will adversely affect the nation's balance of payments causing an intolerable drain on the economy.

In developing plans to improve the nation's energy self-sufficiency, all available alternatives must be investigated. It is a generally accepted premise that the nation cannot achieve this goal by relying solely on reducing our level of energy consumption through a no energy growth economy and energy conservation measures. A no-growth economy is not a viable alternative. We must find new reserves to replace the 3 billion barrels

of oil and 22 trillion cubic feet of natural gas consumed from our existing reserves each year just to keep the present situation from worsening. Furthermore, some increase in energy use is necessary to supply the needs of a growing population even if we do no more than maintain our current standard of living. Energy conservation is an extremely important step toward reaching the goal of energy self-sufficiency. There is much room for improvement in the use of energy and conservation should be a part of our national energy program. However, energy conservation by itself will not be enough.

Any effective plan for achieving a reasonable level of energy self-sufficiency must include development of all of the nation's energy resources. We are indeed fortunate that the present energy shortage is caused by an inadequate development of supplies rather than by depletion of our energy resources. This nation has an abundance of energy resources in a wide variety of forms and simply needs to take the steps necessary to enable these resources to be explored, developed and brought to market.

The nation's most significant energy resources are nuclear and fossil fuels. Nuclear energy has tremendous potential, but it has faced lengthy delays due to environmental objections. It cannot be a substantial factor in our nation's energy supplies for the next

10 to 15 years because of the long lead times in nuclear plant construction. Domestic coal and oil shale resources are extremely large and can be processed into oil and gas to meet the market demands now supplied by conventional sources. However, it does not appear that these resources will make a significant contribution to the nation's energy supplies for many years due to the economic and physical limitations of constructing mines and converting the production into gas and liquid forms. There are also similar limitations to mining coal, converting equipment to burn it in its natural form and cleaning the stack gas to meet air pollution standards. Clearly for at least the next 10 to 15 years there are no alternatives to conventional oil and gas for major new supplies of domestic energy.

In reviewing the alternatives with regard to development of the nation's conventional oil and gas resources, it is apparent that the historical onshore producing areas alone no longer have the potential to supply the nation's petroleum needs. Even the Gulf of Mexico has undoubtedly passed its peak for new discoveries. In our opinion, the nation's greatest potential for new discoveries of conventional oil and gas lies in the remaining Outer Continental Shelf areas of Alaska, California and the Atlantic Coast. To evaluate this potential and achieve the goal of improved energy self-sufficiency the nation

must make all of these offshore areas available for exploration and development through an accelerated leasing program.

Gulf of Alaska Resource Evaluation

In 1974 the Bureau of Land Management requested that the petroleum industry prepare rankings of the 17 Outer Continental Shelf areas of the United States by order or resource potential and environmental concerns. In addition to responding to this request Atlantic Richfield Company ranked these areas by leasing preference. This ranking reflected the combined considerations of resource potential, possible environmental impacts, and operating capabilities that might affect the timing for delivery to market of any reserves found. At that time we assigned the Gulf of Alaska the highest resource potential and the highest preference for leasing of all the OCS areas. We continue to hold that view.

Industry's interest in the Gulf of Alaska and assessment of its potential is based on numerous geological and geophysical studies conducted by individual companies and groups. In an effort to further evaluate the potential of the Gulf of Alaska, Atlantic Richfield together with three other companies recently obtained approval from the U. S. Geological Survey to drill a stratigraphic test in the area. This well has been spudded at a

location some 18 miles offshore in a spot intentionally selected where oil and gas are not expected to be found. Other companies have been invited to participate in this data acquisition program by sharing in the cost of the well. There are now 26 companies participating in the program.

The proprietary geological and geophysical data and interpretative studies developed in the presale exploration programs of the various companies interested in the Gulf of Alaska will be used in evaluating the prospective tracts. Independent evaluations prepared by the different companies combined with competitive bidding in the lease sale will ensure the Government a fair market value for these public resources. Some concern has been expressed publicly that the Government does not receive a fair share of the proceeds from reserves found in OCS areas. An often overlooked fact is that the Government under the present system receives not only the amount paid in bonuses but also 1/6 royalty and income taxes on the industry's profits. Our studies indicate that considering the risks involved in the exploratory ventures of the Outer Continental Shelf and the time value of money the Government receives about 80% of the gross profits from OCS production.

Physical Environment

Weather and sea conditions are a major factor in conducting offshore exploration, development and producing operations. Since the Gulf of Alaska is generally noted as being a very stormy area, the industry has sponsored numerous programs to assess its physical environment. These programs include on site measurements of present conditions and hindcast studies from records of past conditions in the Gulf of Alaska to develop extensive information on wave heights, tides, winds, currents and water temperature. It is necessary to study not only the normal conditions of the Gulf of Alaska, but also to determine conditions that exist during peak storm periods. These extreme or rare occurring storm conditions provide the design criteria for installations that must sustain the maximum forces encountered in a storm.

Studies of the Gulf of Alaska indicate that weather and sea conditions are no harsher than those encountered in other areas in which the industry has operated. In fact, the Gulf of Alaska is very much like portions of the North Sea, especially with respect to wind and wave conditions. Furthermore, extreme wind conditions in the Gulf of Alaska are no harsher than those in the Gulf of Mexico during a hurricane and the water currents and tides are not as severe as those in the Cook Inlet. The most important point from this comparison, however, is that the industry

has faced similar weather and sea conditions in other areas and has successfully dealt with the problems of operating in a similar environment.

Public concern has been expressed with regard to the effects of earthquakes on operations conducted in the Gulf of Alaska. An earthquake could cause faulting of the surface sediments and loss of soil stability resulting in damage to offshore facilities installed in the effected area. Geological hazards of this type caused by earthquake activity can be reduced considerably by utilizing geophysical techniques. Seismic data shows that the danger of a fault rupturing surface sediments in the Gulf of Alaska is extremely low. There has been no evidence discovered of fault displacements in recent sediments on a majority of the structures. Seafloor topography as well as the thickness and contortion history of the overburden have been studied by seismic mapping to determine the potential loss of overburden stability. Such studies in the Gulf of Alaska indicate that the possibility of mass wasting of unconsolidated sediments over most of the area is very remote. The knowledge gained from these studies and from later detailed surveys that will be conducted in selecting specific sites for exploratory drilling or construction of production platforms will enable the industry to minimize the risks of encountering unstable seafloor conditions.

Technological Assessment

Although industry has not previously operated in the Gulf of Alaska and the environment is known to be harsh, we are confident that present technology will enable operations to be conducted safely in this area. Two of the main conditions that make the Gulf of Alaska a harsh environment are the frequent storms and the threat of earthquakes. We have experience in other areas, notably the North Sea, where operations have been successfully conducted under similar storm conditions. The threat of earthquakes can be dealt with by selecting locations for drilling and construction of offshore facilities to avoid areas with unstable seafloor conditions and by applying existing structural design techniques evaluated both in offshore platforms and other types of structures to reduce the risk of failure to an acceptable level.

The experience gained in designing equipment for the North Sea together with the extensive data gathered on the physical environment of the Gulf of Alaska has prepared the industry exceptionally well for operations in this new area. In over a decade of activities in the North Sea during which almost a thousand wells have been drilled, drilling rigs and production facilities as well as support equipment, such as supply boats and helicopters, have been steadily improved and successfully tested in severe operating conditions. For example, the latest

generation of semisubmersible drilling rigs used in the North Sea have safely withstood waves of almost 100 feet. These wave heights are comparable to the extreme waves expected in the Gulf of Alaska.

The experience of oil industry and related support personnel in the North Sea provides a bank of trained manpower uniquely qualified for operations in the similar environment of the Gulf of Alaska. Experience in the North Sea has also led to the development of operating procedures in drilling and producing activities that provide increased safety and efficiency over earlier procedures. This knowledge of improved procedures can be transferred to the Gulf of Alaska. Industry has also learned that the best procedures for safe and efficient operations vary with the severity of weather and sea conditions. Advances in reliable weather forecasting now allows offshore operators to make needed changes in their activities before bad weather reaches the area.

With regard to the adequacy of present technology in protecting against the threat of earthquakes in the Gulf of Alaska, we have already discussed the techniques used in selecting sites for drilling and construction where seafloor stability is not expected to be affected. In locations where the foundations remain stable, the main threat of an earthquake to offshore structures is the force of the shock waves. Platforms installed in the

Cook Inlet and on the California Coast have been designed to withstand these shock forces. Earthquakes have occurred in both areas with no structural damage to the platforms. Although the shock intensity was not as severe as may be experienced in the future either in these areas or the Gulf of Alaska, the experience does provide some indication that platforms can be designed to withstand earthquakes. In addition, structural engineers are experienced in designing other types of structures to withstand earthquake forces and are able to evaluate their design techniques by studying the performance of structures that have been exposed to severe earthquakes. These experts advise that the present technology is adequate for the design of offshore platforms and facilities to withstand these forces with an acceptable level of reliability.

Environmental Considerations

The Gulf of Alaska supports a sizable fishing industry and it is natural that the entry of a new industry into these waters would be viewed with some concern. However, the history of 25 years of operations in the Gulf of Mexico offers substantial evidence that the petroleum industry has the ability and desire to conduct its activities compatibly with fishing, shipping, and other offshore industries. Our relationship in the Gulf of Mexico has been excellent not only with other industries

but also with the adjacent states and onshore communities. Although petroleum related activities arising from the proposed northern Gulf of Alaska lease sale may accelerate the growth of several coastal towns any adverse socio-economic impacts on the majority of the people in the area should be offset by improved job opportunities and higher income. We firmly believe that petroleum operations can be conducted in the Gulf of Alaska with no significant long term environmental impact or adverse effects on other activities and adjacent areas.

Oceanographic studies, both physical and biological, have been or are now being conducted in the northern Gulf of Alaska. The most comprehensive is the one being done by NOAA in conjunction with the Bureau of Land Management. Atlantic Richfield Company, together with three other companies, has just completed an oceanographic survey at the drill site for the stratigraphic test well in the northern Gulf of Alaska. Although environmental studies in the Gulf of Alaska have accelerated in the past two to three years, oceanographic observations date back to 1778, the early 1920's, and continuously since the late 1940's.

The greatest environmental concern with regard to petroleum industry operations in offshore areas is undoubtedly the risk of an oil spill. The petroleum industry takes extensive protective measures in equipment

design, operating procedures, and training of personnel to prevent such an occurrence. The public is further assured of adequate industry measures to provide environmental protection and safety in offshore operations through the requirements of the U. S. Geological Survey's operating orders for OCS areas. Operating orders are now being developed specifically for the Gulf of Alaska based on knowledge gained by many years of industry operations in offshore areas under U. S. Geological Survey jurisdiction.

It is not possible to eliminate all risks of an oil spill regardless of how many safeguards are taken to prevent it. However, it is important that we keep this risk in its proper perspective. In the Gulf of Mexico and the California offshore the petroleum industry has drilled over 16,000 wells on the Outer Continental Shelf. While conducting these activities only four major spills have occurred and only one, the Santa Barbara Channel spill in 1969, caused appreciable short term environmental damage. To the best of our knowledge there is no evidence that even this spill had any permanent effect on the ecology. A National Academy of Sciences' study also helps to place offshore drilling and producing activities in the proper perspective with regard to the threat of pollution. Their study found that these offshore activities have historically caused less than 2% of the total oily discharges into the oceans.

Even though the risk of an oil spill from offshore exploration, development and production is relatively small protective measures are taken to contain and cleanup an accidental spill and minimize the threat of damage. The petroleum industry has established cooperative organizations, such as Clean Seas Inc. and Clean Gulf Associates, for containment and cleanup of spills in all offshore areas in which it operates. A similar organization, Gulf of Alaska Clean Up Cooperative, is now organized for the Gulf of Alaska and will provide oil spill clean up equipment and operating procedures before exploratory drilling and development begins. These cooperative organizations are adequately funded, equipped and manned by personnel trained to respond quickly and effectively in the event of a spill. In addition, the U. S. Coast Guard maintains a "strike team" that is alerted in the event of a spill in offshore waters. This team will take charge of containment and cleanup operations in any case where industry activities are not considered to be adequate.

## Conclusions

Atlantic Richfield Company personnel have reviewed the draft Environmental Impact Statement prepared with respect to the proposed northern Gulf of Alaska lease sale (No. 39). In our opinion, this statement is adequate for a positive decision by the Bureau of Land Management to proceed with the proposed sale. We are also confident of the petroleum

industry's capability and determination to operate safely in the Gulf of Alaska. Considering the alternatives available with regard to meeting the nation's future energy needs, we believe it is vitally important for decisions to be made by the Government which will allow maximum development of the petroleum resources of the Outer Continental Shelf as promptly as possible. We respectfully urge a decision to proceed with the northern Gulf of Alaska lease sale ( No. 39) as presently scheduled.

Comments with regard to the specific items in the draft Environmental Impact Statement are attached.

Sincerely yours,

J. P. Johnson

JPJ/nn

Attachment

Getty Oil Company

Post Office Box 1404, Houston, Texas 77001 · Telephone: (713) 228-9361

Mid-Continent Exploration and Production Division
H. E. Wendt, Offshore Manager

August 27, 1975

Director (732)
Bureau of Land Management
Washington, D. C. 20240

Dear Sir:

Re: Proposed Lease Sale No. 39
Outer Continental Shelf -
Gulf of Alaska

Please accept the attached statement as the views of Getty Oil Company on the proposed sale of oil and gas leases in the Gulf of Alaska, Sale No. 39.

Yours very truly,

H. E. WENDT

ERT/skf

Enclosure

DEPARTMENT OF THE INTERIOR

HEARING ON

ENVIRONMENTAL IMPACT STATEMENT
PROPOSED GULF OF ALASKA OCS LEASE SALE

AUGUST 12-13, 1975

WRITTEN COMMENTS OF

H. E. WENDT
ON BEHALF OF
GETTY OIL COMPANY

Getty Oil Company has reviewed and concurs in the presentation made by the Gulf of Alaska Operators Committee at the August 12-13, 1975, hearing held in Anchorage on the Environmental Impact Statement relative to the possibility of the Department of the Interior conducting an offshore lease sale in the Gulf of Alaska.

Getty Oil Company is confident that offshore drilling and production equipment and operating techniques have been developed to such mechanical excellence that exploration for and production of petroleum can be conducted in the Gulf of Alaska with minimum disturbance to indigenous ecological systems. Any damage that might occur would surely be temporary, and we believe that due consideration should be given to the fact that platforms, etc., will be of limited term - such as for forty years, as stated in the Environmental Impact Statement.

Of apparent concern to a number of those testifying at the hearing was the impact of offshore drilling and production operations on small communities on the Gulf of Alaska shore. Though some of the participants in the hearing suggested considerable delay to "study" the impact, may this company suggest that such consideration be entertained after the initial exploratory drilling. Exploratory drilling is usually done with rather minimum disturbance to shore installations and the rig crews rarely live in the small coastal towns. Crew work patterns of seven days on seven off or ten on ten off usually allow sufficient time for travel to their homes in a larger city. It is our opinion that there will be little impact on coastal towns for the first two or three years after a lease sale, and when platforms are installed and development drilling commenced the impact of boat traffic and supply operations will be gradual and will be absorbed without undue hardship on the local population.

Getty Oil Company speaks from long experience in offshore operations. This company began producing oil from platforms in the Pacific Ocean off southern California before World War II and commenced an exploration program in the Gulf of Mexico in 1946. Our offshore operations now consist of more than 500 oil and gas wells, over 100 production platforms and numerous support facilities. We are satisfied that our operation participation has been, from the start, a safety conscious and minimum pollution occurrence endeavor.

GREATER SITKA

# Chamber of Commerce, Inc.

ALASKA'S HISTORICAL CAPITAL

AUG 22 12 46 PM '75

Director (732)
Bureau of Land Management
Washington, D.C. 20240

Gentlemen:

The Greater Sitka Chamber of Commerce on August 14, 1975 passed the following resolution for your consideration:

WHEREAS, there is an urgent need for energy fuels at the present time; and,

WHEREAS, we strongly feel that American dependence on foreign imported oil, and the attendant whims of foreign politics, should be reduced to o the lowest possible levels with all practical haste: and,

WHEREAS, the outer continental shelf of the Gulf of Alaska is expected to be a potentially rich source of oil, which is so badly needed by industry: and,

WHEREAS, due to the extensive environmental research already done, we feel that additional time, effort and money spent in such pursuits would be counterproductive:

THEREFORE, be it resolved that the Greater Sitka Chamber of Commerce hereby urges your agency to expedite such plans and arrangements as are necessary to the immediate beginning of exploration and development of the Gulf of Alaska outer continental shelf.

This the 14th day of August, 1975.

Lloyd R. Rice, President

RECEIVED
1975
DIVISION OF ENVIRONMENTAL ASSESSMENT

POST OFFICE BOX 638 • SITKA, ALASKA 99835

Richard W. Varney

Cape Yakataga, Alaska 99560

30 July, 1975

Manager, Alaska Outer Continental Shelf Office

P.O. Box 1159

Anchorage, Alaska 99510

Dear Sir:

As a concerned resident of Cape Yakataga, I feel my sentiments regarding the forthcoming oil and gas lease sale should be made a part of the public record.

I strongly feel that the offshore tracts should be leased as soon as possible to prevent a future critical domestic oil shortage. By letting the offshore leases by this fall the various companies will have ample time to discover, drill, and define much needed crud oil reserves in an orderly manner.

The local economy at Cape Yakataga will benefit tremendously when the offshore oil land begins to be developed. Between Cordova and Yakutat lies an approximate 250 mile strip of timbered beach with virtually nc develppment. This area has historically been a living nightmare to pilots due to its isolated nature and unpredictable weather. The ly airstrip in the area is located at Cape Yakataga. The F.A.A. had, until recently, all but shut down their facilities at the runway. With the recent scientific studies taking place in the Gulf of Alaska (approximately 28 miles SSW of Cape Yakataga) already there have been improvements with the facilities at the airport. The F. A. A. in co-operation with the interested oil companies have and are in the precess of installing new navigational equipment and a lighting system. It is difficult to estimate the number of lives that could have been saved in the past if these safety devices had been installed then. Future lives will most assuredly be saved by the installation of this equipment. This is only the beginning, if the offshore lands are developed Cape Yakataga will enjoy an all weather, all instrument airport. The people ultimately benefitting will be the general public.

When the offshore leases are let, the oil companies will need communications. The present facilities at Cape Yakataga are incapable of handling the increased demand that l be placed on them after the leases are let. RCA Alaska Communications employs three ner (myself included) at the communications site. We and our families rely on added growt for continued existence at Cape Yakataga. Since the F.A.A. closed its doors four years

ago, Cape Yakataga has shrunk from a prosperous community of 30 to a hopeful 5. The offshore leases will definitely give the communications industry in Southeastern Alaska a shot in the arm.

With the possibility of offshore oil being developed producing an inexpensive scurce o power, I.E. mining, may be encouraged to develppe. (This area is rich in minerals). Cape Yakataga could concievably becomea very important city in Alaska. I for one feel that now is the time to start progressing towards that goal.

Simply stated, without tbe development of the offshore natural resources Cape Yakataga will atropy and die. On the other hand, with the letting of the leases one can look forward to a steady healthy economic development of the area.

Richard W. Varney

Richard W. Varney

FIDC

DR. WILLIAM R. WOOD
EXECUTIVE VICE PRESIDENT

FAIRBANKS INDUSTRIAL DEVELOPMENT CORPORATION
Phone 907 452-5400 or 452-5752 619 Eleventh Avenue Fairbanks, Alaska 99701

August 28, 1975

Manager
Alaska Outer Continental Shelf Office
Bureau of Land Management
117 W. Fireweed Lane
Anchorage, Alaska

Dear Sir:

The attached written testimony concerning the "Proposed Lease Sale (#39) of Oil and Gas on the Outer Continental Shelf - in the Gulf of Alaska" is presented on behalf of the Fairbanks Industrial Development Corporation.

Sincerely yours,

Wm R. Wood

William R. Wood
Executive Vice President

WRW/kb
encl.

Written Testimony Concerning the "Proposed Lease Sale (#39) of Oil and Gas on the Outer Continental Shelf - In the Gulf of Alaska"

I am Dr. William R. Wood, President Emeritus of the University of Alaska, and currently Executive Vice President of the Fairbanks Industrial Development Corporation, a non-profit community service organization comprised of ninety-two professional and business member firms, representing major business, professional, industrial, and civic enterprises of Interior Alaska.

I am instructed by the Board of Directors of FIDC to urge the earliest feasible development of the potential oil and gas reserves on the Outer Continental Shelf in the Gulf of Alaska, and other Continental Shelf areas surrounding the State of Alaska, consistent with national needs and priorities in the development of essential energy supplies for the people of our nation and state.

It is understood by the FIDC Board that careful consideration by those directly responsible will be given to protecting the ocean environment, as well as the coastal environment involved, and that every effort will be made at the national level to protect the economic interests of the people of Alaska, particularly in those Continental areas immediately impacted by any resource development efforts undertaken, including among other matters exploration, production, and processing of all non-renewable resources found on the Outer Continental Shelf in waters surrounding the State of Alaska.

It is the position of the Board of FIDC that mere exploitation of the Outer Continental Shelf by the national government or private enterprise cannot be adequately justified apart from careful consideration of the issues raised here. A common-sense gradual approach to development in the common interest of the people of Alaska, as well as of the nation, is advocated, rather than any extremist view at either end of the spectrum of possibilities.

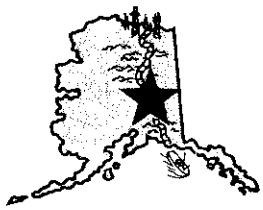
FIDC is confident that this point of view is shared not only by member firms of our non-profit community service organization, but by a strong majority of the residents of the Interior Alaska. We have come to this conclusion after studying a mass of detail that has been made available from a variety of sources during the past several months.

Move. Move now. Move now as a prudent person should who holds the interest of others at heart, as well as one's own future well-being.

Wm R. Wood

William R. Wood
Executive Vice President
Fairbanks Industrial Development
Corporation

August 28, 1975



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William R. Wood
Executive Vice President
Fairbanks Industrial Development
Corporation

August 28, 1975

**Alaska Loggers Association, Inc.**

BOX 425
KETCHIKAN, ALASKA 99901
Phone 225-6114

July 31, 1975

Manager, Alaska OCS office
Box 1159
Anchorage, Alaska 99510

Dear Sir:

Enclosed are four copies of an Alaska Loggers Association Resolution number 75-1 supporting OCS development in the Gulf of Alaska.

Also included are copies of the ALA people map, which provides information about Alaska Loggers Association and locates the members thruout the State.

Please direct the material to the proper people.

Sincerely,

Donald A. Bell
General Manager
ALASKA LOGGERS ASSOCIATION

DAB/mjs
Enc/
cc. James Campbell
R.L. Jernberg
Keith Arnold

ALASKA LOGGERS ASSOCIATION RESOLUTION 75-1

WHEREAS the Alaska Loggers Association, Inc., is a legally incorporated Alaska trade association with a membership of 91 regular members and 165 associate members, individuals and firms involved in Alaska's wood products industry, and

WHEREAS this industry ranks third in total employment in Alaska, and

WHEREAS the United States is now approximately 35 percent dependent on unreliable foreign sources for its oil and this dependence is still increasing, and

WHEREAS the wood products and petroleum production industries not only share the same producing areas harmoniously but also receive some mutual benefits through the resulting economic interaction, and

WHEREAS it is belief of the Directors of the Alaska Loggers Association, Inc., that a mutually cooperative development is desirable in the Gulf of Alaska region and that continued growth of both industries is in the best interests of the State and Nation; now, therefore, it is:

That Alaska Loggers Association, Inc., support prompt leasing of OCS petroleum exploration tracts in the Gulf of Alaska by the Department of Interior and urge local, state and federal government cooperation in fostering exploration

Approved this 25th day of July 1975.

James F. Campbell
President
Alaska Loggers Association Incorporated

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James F. Campbell
President
Alaska Loggers Association Incorporated

# Greater
# Juneau Chamber of Commerce

"SERVING ALASKA'S CAPITAL"

200 N. Franklin Street (907) 586-2201 Juneau, Alaska 99801


August 28, 1975

U. S. Department of Interior
Bureau of Land Management
Alaska Outer Continental Shelf Office
P. O. Box 1159
Anchorage, Alaska 99501

Gentlemen:

The Greater Juneau Chamber of Commerce has, since OCS became a household expression, been for the leasing and development of the oil and other resources of the Continental Shelf.

Juneau is more vibrant now than in the past and we do want to be evaluated with the other cities as a possible important cog in the development.

We are not "playing dead" and want the Alaska Outer Continental Shelf Office to know we are ready to help in whatever means you need.

Please keep us in mind.

The enclosed states our position and has been forwarded to the Bureau of Land Management in Washington, D. C. and to our Congressmen.

Sincerely,

Radder.

R. A. "Dutch" Derr
Executive Vice President

Enclosure

RAD:ew

A RESOLUTION

WHEREAS, the Board of Directors of the Greater Juneau Chamber of Commerce is a representative of the business community for the residents of the City and Borough of Juneau, Alaska.

WHEREAS, the future ability of Juneau to meet its service responsibilities to its constituent member is to a large extent dependent on healthy regional, state and national economy to which increased domestic oil production is essential and,

WHEREAS, the residents of the City and Borough of Juneau, Alaska are currently dependent primarily on state and federal government, tourism and related services as a source of revenue and,

WHEREAS, these industries are totally dependent on petroleum for its energy and,

WHEREAS, there is no evidence to indicate that Outer Continental Shelf leasing within the Gulf of Alaska and oil development is incompatible with these industries, we must totally support the proposed fall/winter, Gulf of Alaska, Outer Continental Shelf leasing.

WHEREAS, oil development holds a promise of a boarder industrial base and economic diversification for the residents of the City and Borough of Juneau and,

WHEREAS, such economical growth can be expected to result in a more fruitful lifestyle for the residents of the City and Borough of Juneau, it is therefore resolved that the Board of Directors of the Greater Juneau Chamber of Commerce support prompt leasing of OSC tracts in the Gulf of Alaska by the Bureau of Land Management.

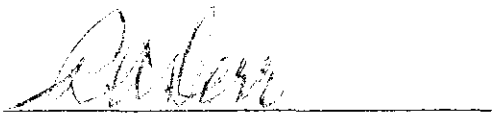
WHEREAS, it is also desired that within the Draft Environmental Impact Statement, Outer Continental Shelf proposed gas and leasing in the northern Gulf of Alaska be broadened within its "Social and Economic Impact of the Northern Gulf of Alaska Coast" to include the City and Borough of Juneau relative to short and long term on-shore impact.

WHEREAS, Juneau is the only major community within the coastal Alaskan waters within a 200 mile radius of said lease sale that is not included within the Draft Environmental Impact Statement,

WHEREAS, Juneau is the only community within 175 miles of the impact area that has proper planning and zoning laws present to facilitate anticipated on-shore impact,

WHEREAS, the Board of Directors of the Greater Juneau Chamber of Commerce demands that the final Environmental Impact Statement include the assessment of what Juneau's potential impact on such long term leasing is.

Passed and Approved on August 25, 1975.

Signed 

R.A. "Dutch" Derr
Vice President
Greater Juneau Chamber of Commerce

Greater
Juneau Chamber of Commerce
"SERVING ALASKA'S CAPITAL"
200 N. Franklin Street (907) 586-2201 Juneau, Alaska 99801



August 27, 1975

Director (732)
Bureau of Land Management
Washington, D. C. 20240

Dear Sir:

The enclosed is a much discussed resolution from the Greater Juneau Chamber of Commerce.

We are unanimous in our support of the Outer Continental Shelf leasing and oil development.

We are also desirous of being included in the "Social and Economic Impact of the Northern Gulf of Alaska Coast."

It is important that the Bureau of Land Management realizes that Juneau is a very vibrant community and that the Capital Move has made the people more aware of opportunities that are available to us.

Please don't write us off - keep us informed. We <u>are</u>, and may continue to be, the Capital of Alaska.

Sincerely,

R. A. "Dutch" Derr
Executive Vice President

Enclosure

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Vice President
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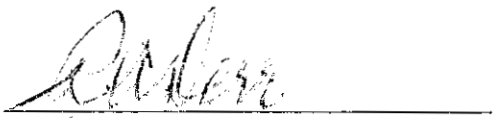
Signed 

R.A. "Dutch" Derr
Vice President
Greater Juneau Chamber of Commerce

[illegible]

[illegible]

[illegible]
Anchorage, Alaska 99510
August 27, 1975

Bureau of Land Management
Alaska Outer Continental Shelf Office
Post Office Box 1159
Anchorage, Alaska 99510

Gentlemen:

The Alaska Chapter of the Sierra Club was unable to present oral testimony at the public hearings held here recently on proposed oil and gas leasing in the Northern Gulf of Alaska(Sale No. 39), as described in your Draft Environmental Impact Statement dated June 27, 1975. We are submitting this written statement in lieu of oral testimony, and request that it be made a part of the permanent hearing record.

We wish to state that we understand the importance of ensuring an adequate supply of oil and gas, and other forms of energy for the United States in the years ahead. Sierra Club members are aware of the importance of energy resources to our country, and we realize the consequences of a shortfall of oil and gas to the American economy. We are as concerned as are other Americans, about the need for these resources; however, we believe that the natural environment, including the offshore areas, must be given adequate protection in the process of exploring for, and extracting oil and gas and other necessary resources.

We believe that the Draft E.I.S., while it no doubt represents a considerable amount of effort on the part of the Alaska O.C.S. staff, cannot be considered adequate in many respects because of the lack of sufficient baseline data. We believe that the studies presently under way should be completed, and their results completely analyzed, before any decision to hold an oil and gas lease sale in the Northern Gulf of Alaska is made. We estimate that a period of at least two years, and longer than this if necessary, will be required for this purpose. We believe, therefore, that any decision to hold a Northern Gulf of Alaska oil and gas lease sale before at least September of 1977 would be premature and unjustified, and we request that such a delay be made.

Regarding alternatives to the proposed sale, Section VIII of the Draft E.I.S., we believe that under Subsection B., "Delay Sale", all three considerations ("Until new equipment is available to provide increased environmental protection; pending completion of studies... and Pending completion of coastal zone and growth plans onshore) are valid, and are sufficiently important as to justify a delay in the sale until all three are satisfactory to the State of Alaska and to the Council on Environmental Quality.

We believe that the alternative of energy conservation would be adequate to cover any shortfall in energy supply until the three conservation measures mentioned in the previous paragraph were satisfied. We realize that although this alternative must be included in the draft E.I.S., the authority to mandate it is not the B.L.M.'s, but rather is that of the Congress and the Federal Energy Administration. We do wish to point out that a number of authoritative studies have recently pointed out the practicality and necessity of this alternative. For instance, the Council on Environmental Quality's proposal, "A NATIONAL ENERGY CONSERVATION PROGRAM: THE HALF AND HALF PLAN", and the Ford Foundation's ENERGY POLICY STUDY both describe practical alternatives which should be given serious consideration.

The public hearings held here recently saw the oil industry and its supporters assure the B.L.M. that they have the capability to explore for and produce oil and gas in the Northern Gulf of Alaska with minimal risk to the environment. This is standard procedure; has anyone ever heard them admit that they might not be able to do so? We believe, however, that these people really can't be considered an unbiased, objective source of information, and we hope that you will take this into consideration when evaluating their testimony. We believe that the Council on Environmental Quality, which held hearings around the country, including Alaska, on "Project Independence", is a much more reliable and accurate source of information upon which to base a decision on outer continental shelf oil and gas leasing schedules. As you are no doubt aware, the C.E.Q., in April of last year, released its report on O.C.S. oil and gas leasing, and stated that such leasing in the waters off Alaska should be held last, after other areas have been leased. We certainly agree with the C.E.Q.'s recommendations, and urge that you give them the weight which they deserve.

We hope that this comment on the Draft E.I.S. is useful to your agency in drawing up its final Impact Statement. We appreciate the opportunity to submit our views, and want to thank you for receiving them.

I am, Sincerely,

Gerald R. Brookman
First Vice-Chairman, Alaska Chapter, Sierra Club
(Acting Chairman)

Mobil Oil Corporation



August 22, 1975

P.O. BOX 5444
DENVER, COLORADO 80217

H.J. FITZGEORGE
REGION VICE PRESIDENT

Mr. Edward Hoffman
Manager, Alaska Outer
Continental Shelf Office
Bureau of Land Management
P. O. Box 1159
Anchorage, Alaska 99501

Re: DRAFT ENVIRONMENTAL IMPACT STATEMENT
PROPOSED LEASE SALE (OCS No. 39)
OUTER CONTINENTAL SHELF SALE
OFFSHORE NORTHERN GULF OF ALASKA

Dear Mr. Hoffman:

Attached for inclusion in the record is Mobil Oil Corporation's written statement commenting on the draft Environmental Impact Statement which was the subject of the hearing beginning on August 12, 1975. We would appreciate it if you would include this written statement as part of the record of such hearing.

Very truly yours,

H. J. Fitzgeorge

MOBIL OIL CORPORATION STATEMENT

SUBMITTED TO THE
U.S. DEPARTMENT OF THE INTERIOR

REGARDING THE
DRAFT ENVIRONMENTAL IMPACT STATEMENT
PROPOSED 1975 OCS OIL AND GAS LEASE SALE

NORTHERN GULF OF ALASKA
OCS SALE NO. 39

Mobil Oil Corporation has reviewed the Draft Environmental Statement relative to the proposal to offer acreage for oil and gas leasing on the Outer Continental Shelf in the Gulf of Alaska. It is a comprehensive study which provides a good basis for evaluation of the many issues which arise in connection with the proposed leasing.

Mobil would like to file some brief remarks focusing on that section of the Draft Environmental Statement which, in our view, is central to a decision as to whether the proposal should be implemented; namely, alternatives to this proposed action.

Fundamental to the evaluation of any alternative is an understanding of U.S. oil and gas consumption today and for the decade ahead.

Various supply and demand forecasts have been made in recent months. Mobil's forecast is this:

1. Even with vigorous conservation efforts, total U.S. energy consumption will grow with time as our population increases, as we continue to develop industrially, and as we strive to increase the standard of living for all Americans.

2. Oil and gas today supply more than three-fourths of our energy needs. Even with increasing use of alternative energy sources, Mobil projects that by 1985 oil and gas will still be providing about two-thirds of the energy consumed in this country, with the actual volume of "conventional" oil and gas required in 1985 exceeding current consumption by about 15%.

3. Along with this increased oil and gas consumption in 1985, there will be a substantial decrease in production from presently proved domestic oil and gas reserves. The 1974 production level of nearly 11 million barrels of oil and 60 billion cubic feet of gas per day from these reserves is projected to decline to about 5 million barrels of oil and 20 billion cubic feet of gas per day in 1985.

4. Converting gas to barrels of oil on the basis of energy content, this means that by 1985 the U.S. will be using about 32 million equivalent barrels [1] of "conventional" oil and gas per day, but we estimate the country will only be producing around 9 million equivalent barrels per day from presently proved reserves.

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[1] Barrels of oil plus gas converted to barrels of oil on the basis of energy content. (5600 cubic feet of gas = 1 Bbl. of oil)

The projected gap of 23 million equivalent barrels per day by 1985 can only be filled by increased imports and increased domestic production. It is clearly in the best interests of this nation to strive toward increasing domestic production. Because of the exploration maturity of most onshore geologic provinces, Mobil Oil Corporation believes that the vast and little explored Outer Continental Shelf offers the largest potential for significant new oil and gas discoveries.

It is against this background that alternatives to the proposed sale must be assessed.

The first alternative is to simply withdraw the proposed sale as well as others in frontier OCS areas. This action can only increase imports.

Mobil is in favor of conservation to cut out waste, but as stated earlier, and as the Draft Environmental Statement points out, conservation will not halt the growth of our use of energy.

Secondly, even when synthetic and alternate energy sources are fully considered, the fact remains that by 1985 the U.S. will still require about 15% more conventional oil and gas than is used today. It should also be fully realized that each alternate energy source has its own peculiar set of environmental impacts. Finally, vastly increased oil imports will not only decrease the security of our future supply, but will further aggravate our balance of payments problem with a resulting unfavorable impact on the nation's economy.

Withdrawing this sale, or other frontier OCS sales, does not constitute a viable alternative if we are to work toward increasing the domestic oil and gas production the United States so vitally needs.

The second alternative to the proposed OCS sale would be to delay it pending development of new environmental protection technology, further impact studies, new OCS operating orders, and completion of onshore land use plans. In Mobil's view, delay for these reasons is not appropriate.

The industry's technology for environmental protection has been continuously improving and operating regulations and procedures have become more stringent. Significantly, there is no evidence that any past spill has had a permanent adverse effect on the environment. Further, industry has participated in development of advanced spill clean-up technology, and has established cooperative clean-up organizations in the areas where it now operates.

Delay of the proposed sale in order to make additional environmental impact studies might be justifiable if knowledge of the Gulf of Alaska borderland environment were meager. Knowledge is in fact substantial and additional study would probably not change the fundamental understanding of this environment or the impact of oil and gas operations on it.

Delay for the purpose of developing a new set of OCS operating orders would ignore the comprehensive and tested OCS orders which already exist. Furthermore, the Secretary of the Interior now has the authority to revise these orders at any time so far as they pertain to prevention of waste, conservation of natural resources, or protection of correlative rights.

Finally, we believe a delay in the proposed sale to allow completion of onshore land use plans is not necessary. Mobil endorses the concept of coordinated planning of production facilities, pipelines, and onshore facilities as new offshore producing areas are discovered and developed. Industry, working with federal and state government agencies, has the ability to do this planning in the time span that normally exists between initial discovery and development.

Significant drilling must take place before reserves and producing rates can be estimated so that production and transportation facilities can be properly designed. Mobil believes the time requirements inherent in progressing from exploration to field development afford adequate opportunity for full analysis and approval of final field development plans and transportation systems.

These timing considerations are especially important as they relate to the impact of future OCS production on our energy supply. The urgency for an early beginning is evident when we consider the time involved from initiation of an offshore lease sale to actual production of oil and gas from a given lease. Variations in rig availability, water depth, wind and wave conditions, platform fabrication capacity, and remoteness of an area all bear on lead time. We estimate for new leases this lead time typically will be in the range of from four to seven or more years. Development of new offshore areas must begin at the earliest possible time if production from these areas is to make a significant contribution to our supplies in the next decade.

Another alternative to the proposed sale which we feel deserves comment is exploration of the OCS by government drilling prior to a sale. Mobil is opposed to this idea. We believe that the competitive forces present within the oil and gas industry have served and will continue to serve the public interest by inducing multiple conceptual approaches to exploration, divergent assessments of potential and risk, development of new technology, and high lease bonus prices which result in an economic necessity for expeditious development of new production. Certainly, the environmental impact of government exploration should not be less than that of industry exploration.

In summary, Mobil believes the United States must proceed with leasing in frontier OCS areas now if we are to strive toward establishing the secure future energy supply this country must have. Also, Mobil is confident that this can be done with full regard for establishing a proper balance between environmental protection and development of a much needed resource.

REPRESENTATIVE
M. F. "MIKE" BEIRNE
P. O. BOX 4-1539
ANCHORAGE, ALASKA 99509
PHONE (907) 272-1445
POUCH V STATE CAPITOL
JUNEAU, ALASKA 99801
PHONE BARANOF HOTEL
(907) 586-2660

# Alaska State Legislature

## House of Representatives

COMMITTEES
STATE AFFAIRS
LABOR AND MANAGEMENT

July 25,1975

The Bureau of Land Management
Alaska Outer Continental Shelf Office
800 "A" Street
Anchorage, Alaska 99501

Gentlemen:

I strongly support the exploration and development of our outer continental shelf areas. I expect to be present at, and to give testimony at the August 12- 13 hearings to be held in Anchorage.

There is no question that America must have immediate exploration and development of the outer continental shelf. Proper environmental safeguards are proper and necessary. These safeguards however should be reasonable in every respect so that we do not add to the cost of living. Certainly we consumers ultimately must pay any and all bills, and all costs related to these safeguards, as well as for the exploration, developing and marketing of our petroleum resources.

Sincerely yours,

M. F. Beirne

mfb:bp

M.F. "Mike" Beirne
Alaska State House of
Representatives

cc: Senator Ted Stevens
Senator Mike Gravel
Congressman Don Young

2+

Interior

T30

Elm

Dear President Ford,

I feel the Dept. of Interior has gone too far when it proposes to lease millions of acres of Alaskan sea to the oil companies. Who gave the Dept. or the oil companies the right to murder extraordinary numbers of marine organisms that wil ~~ll~~ no doubt perish in unavoidable oil spills--unavoidable because of the conditions present in the Gulf of Alaska. How can the oil companies say that they can operate in a sea area that has ninety foot waves, 100 mile per hour winds, and earthquakes measuring 6.8 on the Richter scale?

It is evident from the facts that the Dept. of Interior and the oil companies realize that spills--massive spills,will occur, but they dont care as long as it brings in oil and money. You must be aware that that is a very shallow view. Their value system is faulty if they think oil is more valuable than the environment We can learn to live with less oil,we must, but we can not survive without the ocean; it is the central key to life on Earth.

In view of the above, I urge you to halt the Dept. of Interiors plan to lease Alaskan seas to the oil companies before it is too late.

Sincerely,
Jennifer Malvin

Jennifer Malvin

Please write to
612 N. ARDEN DR.
BEVERLY HILLS, CALIF
90210